

EXHIBIT 2

In the Matter Of:

FAIR FIGHT ACTION vs BRAD RAFFENSPERGER

1:18-cv-05391-SCJ

JANET THORNTON PH.D

May 22, 2020



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May 22, 2020

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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

FAIR FIGHT ACTION, INC.; CARE IN
ACTION, INC.; EBENEZER BAPTIST
CHURCH OF ATLANTA, GEORGIA, INC.;
BACONTON MISSIONARY BAPTIST
CHURCH, INC.; VIRGINIA-HIGHLAND
CHURCH, INC.; and THE SIXTH
EPISCOPAL DISTRICT, INC.,

Plaintiffs,

CIVIL ACTION NO.:
1:18-cv-05391-SCJ

vs.

BRAD RAFFENSPERGER, in his
official capacity as Secretary
of State of the State of
Georgia and as Chair of the
State Election Board of Georgia;
REBECCA N. SULLIVAN, DAVID J.
WORLEY, and SETH HARP, in their
official capacities as members
of the STATE ELECTION BOARD;
and STATE ELECTION BOARD,

Defendants.

/

VIDEOTAPED VIDEOCONFERENCE DEPOSITION
OF JANET THORNTON, Ph.D.
Appearing Remotely Via Videoconference from
Leon County, Tallahassee, Florida 32308

Taken By Counsel for Plaintiffs
(Pages 1-93)

Friday, May 22, 2020
10:03 a.m. - 2:11 p.m.

HELD REMOTELY
VIA VIDEOCONFERENCE

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1 Stenographically Reported By:
2 Jennifer Figueroa, RPR, CLR, FPR
3 Notary Public, State of Florida at Large
4 Appearing Remotely from Hillsborough County, Florida
Esquire Deposition Solutions - Tampa Office
Phone - 813.221.2535, 800.838.2814
Esquire Job No. J5562519

6
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17 On Behalf of the Plaintiffs

18
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22 On Behalf of the Defendants

23
24 ALSO PRESENT:

25 GEORGE ELLIS, VIDEOGRAPHER



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EXHIBITS

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1 Videoconference deposition taken before
2 Jennifer Figueroa, Registered Professional Reporter and
3 Notary Public in and for the State of Florida at Large,
4 in the above cause.

5 * * * * *

6 THE VIDEOGRAPHER: I will now start the
7 recording. We are now on the record. The time is
8 now 10:03 a.m. Eastern Standard Time on May 22nd,
9 2020. This begins the videoconference deposition
10 of Dr. Janet Thornton taken in the matter of Fair
11 Fight Action, Incorporated, et al., versus Brad
12 Raffensperger, et al., filed in the United States
13 District Court for the Northern Division [sic] of
14 Georgia, Atlanta Division, case number which is
15 1:18-cv-05391-SCJ.

16 My name is George Ellis. I'm your remote
17 videographer today. The court reporter is Jennifer
18 Figueroa. We are representing Esquire Deposition
19 Solutions. As a courtesy will everyone who is not
20 speaking please mute your audio and please remember
21 to unmute your audio when you are ready to speak.

22 Counsel, will you please state your name and
23 who you represent, after which the court reporter
24 will swear in the witness.

25 MS. EDMONDSON: Elizabeth Edmondson of

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1 Jenner & Block for plaintiffs.

2 MS. JOHNSON: Tassity Johnson of
3 Jenner & Block for plaintiffs.

4 MS. BRYAN: This is Leslie Bryan,
5 Lawrence & Bundy for plaintiffs.

6 MR. BELINFANTE: This is Josh Belinfante of
7 the Robbins firm for defendants.

8 THE COURT REPORTER: Okay. The attorneys
9 participating in this deposition acknowledge that
10 I, the court reporter, am not present with the
11 witness and that I will be reporting the
12 proceedings and administering the oath remotely.
13 This arrangement is pursuant to the Florida Supreme
14 Court Administrative Order No. AOSC20-23. The
15 parties and their counsel consent to this
16 arrangement and waive any objection to this manner
17 of reporting.

18 Please indicate your agreement by stating your
19 name and your agreement on the record, starting
20 with plaintiffs' counsel.

21 MS. EDMONDSON: Elizabeth Edmondson. I agree.

22 MS. JOHNSON: Tassity Johnson. I agree.

23 MR. BRYAN: Leslie Bryan. I agree.

24 MR. BELINFANTE: Josh Belinfante. I agree.

25 THE COURT REPORTER: Okay. Dr. Thornton,

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1 could you please raise your right hand for me?

2 Do you swear or affirm that the testimony
3 you're about to give will be the truth, the whole
4 truth, and nothing but the truth?

5 THE WITNESS: Yes.

6 THE COURT REPORTER: And I just want to make
7 sure you are currently located at Tallahassee,
8 Florida, with a ZIP code of 32308?

9 THE WITNESS: Yes.

10 THE COURT REPORTER: Thank you.

11 Ms. Edmondson, you may proceed.

12 THEREUPON,

13 JANET THORNTON, Ph.D.,
14 having been first duly sworn or affirmed, was examined
15 and testified as follows:

16 DIRECT EXAMINATION

17 BY MS. EDMONDSON:

18 Q. Good morning, Dr. Thornton.

19 A. Good morning.

20 Q. Dr. Thornton, you've been deposed before.

21 Correct?

22 A. Yes.

23 Q. Approximately how many times?

24 A. I don't know.

25 Q. Have you ever done this over video before?

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1 A. No.

2 Q. So that is a first. So while I'm sure you're
3 familiar with the procedures for being deposed, I'm
4 going to focus on a few that may be particularly
5 relevant today. Of course the court reporter can only
6 take down verbal answers and the court reporter can only
7 hear one person at a time. So we'll need to make sure
8 not to talk over each other. Understood?

9 A. Yes.

10 Q. And that's going to be especially challenging
11 since we're doing this in this very bizarre remote
12 setup.

13 Of course your attorney, Mr. Belinfante, may
14 object to one of my questions. So please give him a
15 chance to interpose an objection before responding;
16 unless he instructs you not to answer, however, please
17 go ahead and answer the question afterwards.
18 Understood?

19 A. Yes.

20 Q. If you'd like to take a break at any moment,
21 please just let me know and we can go ahead and take a
22 break as long as a question is not pending, and we'll
23 plan to take a break about every hour or so. Okay?

24 A. Okay.

25 Q. And if there's any question I ask that is

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1 confusing or vague or you just don't understand, please
2 let me know, and I will try to clarify; but if you don't
3 say anything, I will assume you understand the question.

4 With that, Dr. Thornton, is there any reason
5 you may not be able to testify truthfully and accurately
6 today?

7 A. I don't believe so.

8 Q. How did you prepare for your deposition
9 today?

10 A. I reviewed my reports.

11 Q. Only your reports or any other documents?

12 A. I reviewed Dr. Herron's reports in parts -- in
13 part.

14 Q. And did you meet with attorneys for defendants
15 to prepare for this deposition?

16 A. I did not meet with them. I had a brief -- I
17 had a phone call.

18 Q. I should have realized nobody's meeting with
19 anybody at this point.

20 Okay. I'm going to ask you a few questions
21 about your educational and professional background. I'm
22 not going to go into your educational background in any
23 detail, but if you'd like to have your CV in front of
24 you, which I think may be what you're doing right now,
25 we can go ahead and mark your report, your rebuttal

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1 report, as Exhibit 1, and your CV is at Appendix A.

2 (Exhibit 1 will be marked for identification
3 and attached to the transcript once received by the
4 reporter.)

5 BY MS. EDMONDSON:

6 Q. I take it you prepared this report, this
7 Exhibit 1?

8 A. Yes.

9 Q. Who assisted you in preparing it, if anyone?

10 A. Dr. Carrie Amidon, and an analyst, Michael
11 Testa, both of whom worked under my direction.

12 Q. And you're currently a managing director at
13 Berkeley Research Group. Correct?

14 A. Yes.

15 Q. And are the two people you mentioned,
16 Dr. Amidon and Mr. Testa, also at Berkeley Research
17 Group?

18 A. Yes.

19 Q. At a high level can you tell us what is the
20 focus of your work at BRG?

21 A. I manage projects. I compare statistical
22 analyses and manage a group of people who work under my
23 direction in preparing various analyses on numerous
24 different projects.

25 Q. And would it be fair to say a focus of your

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1 work at BRG is labor and employment issues?

2 A. That is one of them, yes.

3 Q. And was that also the case at ERS Group where
4 you were employed previously?

5 A. Yes.

6 Q. And can you tell us what the other primary
7 focus is of your work in terms of subject matter or
8 industry are besides labor and employment?

9 A. I worked on a number of matters involving
10 credit and lending, and I have prepared various analyses
11 involving questions involving voting rights. There may
12 be some other areas, but those would be some of the
13 primary areas.

14 Q. And your resume states that as far as labor
15 and employment goes you have prepared economic and
16 statistical analyses involving employment discrimination
17 claims. Can you elaborate a little bit on what those
18 statistical analyses might entail?

19 A. Sure. So I'm asked to, for example, conduct
20 analyses that look at questions of equal pay regarding
21 gender, and race and ethnicity among other demographic
22 groups; both in terms of questions that are raised in
23 terms of compensation, discrimination where it's
24 litigation, as well as I'm retained by companies to --
25 and other entities to analyze their compensation

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1 decisions to determine if there are disparities among
2 various groups so they can then investigate.

3 In addition I've been asked to examine -- you
4 know, more recently I've been asked to analyze
5 termination and reduction in force and furloughs for
6 organizations given the current economic climate. And
7 additionally both in terms of proactively as well as in
8 terms of involving litigation or other inquiries,
9 questions on claims of hiring, promotion, as well as
10 termination decisions. So I'm looking at decisions and
11 constructing analyses to determine whether or not
12 there's disparate impact with respect to a particular
13 group after controlling all those factors.

14 Q. So setting aside your consulting work for
15 companies and focusing only on the work that's been in a
16 litigation context, have you ever provided an analysis
17 of the type you've described for a plaintiff bringing an
18 employment discrimination claim?

19 A. Yes.

20 Q. On approximately how many occasions,
21 ballpark?

22 A. I don't know.

23 Q. Do you think it would be more than 5?

24 A. There's probably a good chance of that.

25 Q. More than 20?

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1 A. Probably not.

2 Q. And have you provided an analysis of this type
3 for a defendant defending against an employment
4 discrimination claim?

5 A. I've been retained by defendants in these
6 sorts of claims, yes.

7 Q. And on how many -- approximately how many
8 occasions?

9 A. I don't know.

10 Q. Again, do you think it's more than 5?

11 A. Probably, yes.

12 Q. But less than 20?

13 A. I don't know because sometimes one is retained
14 but it doesn't involve testimony.

15 Q. Understood. I'm asking about times where it's
16 in the context of a litigation even if it doesn't
17 ultimately result in testimony.

18 A. I don't know. Going back through my career, I
19 don't know how many times I've been retained.

20 Q. Okay.

21 A. By either party, for that matter.

22 Q. Okay. Now I'd like to turn to the work you've
23 done on voting-rights issues, which is another category
24 you mentioned. In terms of the time you spend, about
25 how much of your work at BRG is focused on voting-rights

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1 issues in one way or another?

2 A. I don't know. There are months where I'm not
3 working on voting-rights matters and other months where
4 it's a larger percentage. It varies month to month.

5 Q. Would you say that it's a smaller percentage
6 of your work than the employment-discrimination
7 issues?

8 A. It would depend on the period of time. Since
9 coming to BRG there have been times when it's been a
10 larger portion, you know, over 50 percent; and other
11 times not. This is a difficult question to answer.

12 Q. Sure. I understand.

13 And then the other category you mentioned was
14 analyses dealing with credit and lending. Would you say
15 that that is more or less than the time you spend on
16 voting-rights issues?

17 A. Currently less.

18 Q. Okay. And your resume mentions that you have
19 previously provided expert testimony on voting-rights
20 issues. Have you published any papers on voting-rights
21 issues?

22 A. No.

23 Q. Have you given any academic presentations on
24 voting-rights issues?

25 A. I don't believe so.

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1 Q. Have you served as a paid or unpaid consultant
2 outside of a litigation context on any voting-rights
3 issues in any capacity?

4 A. No.

5 Q. Have you ever given any training or other more
6 practical instruction on voting-rights issues?

7 A. No.

8 Q. And your resume references that your previous
9 testimony on voting-rights issues included analysis of
10 voter ID match rates and voting patterns among
11 demographic groups. Are there other voting-rights
12 issues that you have provided testimony on?

13 THE WITNESS: I believe my video is freezing
14 up.

15 MS. EDMONDSON: It looks that way to me too.
16 Should we go off the record for a moment?

17 THE WITNESS: I don't know what I'm supposed
18 to do.

19 THE COURT REPORTER: Would you like to go off
20 the record, Counsel?

21 THE VIDEOGRAPHER: Off the record. The time
22 is 10:18.

23 (Recess from 10:18 a.m. to 10:33 a.m.)

24 THE VIDEOGRAPHER: We are back on the record.
25 The time is 10:33.

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1 BY MS. EDMONDSON:

2 Q. Dr. Thornton, you can set aside the CV part of
3 your report for now because now I'd like to switch to
4 asking you about your findings.

5 In Paragraph 17 of your report you stated that
6 you were asked -- I'll let you turn to that page. You
7 stated that you were asked by counsel for the State to
8 review the report of plaintiffs' expert, Dr. Herron, to
9 determine if his assertions regarding the closures and
10 movement of polling places adversely impacted
11 African-American voters. That statement appears to be
12 missing a word. Is it fair to say that you were asked
13 to determine if his assertions were accurate?

14 A. I believe so.

15 Q. And did counsel for the State ask you to do
16 any -- to opine on any other topics?

17 A. No. They asked me to review his report
18 calculation.

19 Q. In Paragraph 18 you also talk about your
20 understanding of certain of the allegations in the
21 complaint in this matter. Did you undertake in your
22 report to analyze the accuracy of these allegations in
23 the complaint referenced in Paragraph 18?

24 A. Only to the extent that I was -- to some
25 extent -- the allegation that I describe in Paragraph 18

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1 is to some extent addressed in my review of Dr. Herron's
2 report.

3 Q. And as part of your work in this matter did
4 you review the entirety of the complaint?

5 A. I likely did back when I received it.

6 Q. In Paragraph 19 you provide a summary of key
7 findings, I think there are 10 of them. Were there any
8 other findings, less key, I suppose, that you made as a
9 result of your review of Dr. Herron's report?

10 A. As I recall what I described here is -- are
11 the key findings. There could be more in-depth or
12 subfindings within these, but these were the -- but they
13 would perhaps fall in through these.

14 THE COURT REPORTER: Doctor, could you please
15 speak up a little bit? I'm having a hard time
16 hearing you.

17 THE WITNESS: Sure.

18 THE COURT REPORTER: Thank you.

19 THE WITNESS: Sure. I apologize. I'm moving
20 my phone.

21 THE COURT REPORTER: Thank you.

22 BY MS. EDMONDSON:

23 Q. And is it fair to say to the extent you have
24 subfindings those are also included in either your
25 original report or your supplemental report?

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1 A. I think so. You know, when I looked at the
2 data, when I look at the results, the underlying
3 information, there are pieces that I may not have
4 described but they would fall under the category. So I
5 may -- I could have perhaps elaborated more; but in
6 general they're there, but I could perhaps have
7 described in more detail.

8 Q. And were there any analyses that you undertook
9 that did not lead to any findings? So separate analyses
10 from those described in your report?

11 A. No, other than reviewing -- you know,
12 reviewing the underlying information that fed into these
13 calculations. So there could have been something more
14 county-specific that I would have looked at, but would
15 not change my findings. They would perhaps elaborate on
16 them.

17 Q. But there are no extra tables or graphs or
18 anything else you created but did not end up using in
19 your report. Is that correct?

20 A. Not that I recall.

21 Q. Okay. If you would turn to Appendix B of your
22 report which is on Page 29 of the PDF in my version, so
23 at the very, very end, this is your list of materials
24 relied upon. Did you rely on any other materials, such
25 as data or studies, other than those listed here?

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1 A. I don't believe so. The only question I
2 cannot recall is Dr. Herron relied on numerous data
3 sets, and I cannot recall if he produced those data sets
4 or once we received his report and we saw that there
5 were data sets that he did not provide, we may have
6 requested those; but otherwise, there would not have
7 been anything additional. They would have been
8 presumably the same databases that he used because we,
9 of course, ran his programs to see if we could match up
10 his table.

11 Q. And following up on that if you turn back to
12 Paragraph 20 of the body of your report, and I'll let
13 you turn back, you state that you "relied upon the
14 programming logic that Dr. Herron produced on March 4th,
15 2020. His code was modified in order to generate his
16 summary results by county as reported below."

17 Can you just describe for us in a little more
18 detail what you did with the code, how you modified it
19 in order to provide the results on a county-level basis?

20 A. Sure. So we're obviously running the code on
21 our computers rather than Dr. Herron's computer or his
22 analyst, so we would have needed to modify his logic to
23 run the code on our database. Additionally, when we ran
24 his code, as I recall, there were a few fields that he
25 had truncated. So we would have, you know, modified the

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1 code to, you know, read in the data properly. There
2 were also a few files that he did not produce. It ended
3 up that those files were not necessary to generate the
4 table.

5 So once we were able to run his code -- for
6 example, for Table 3, we would have run his code and
7 just verified we matched his percentages. And then once
8 we did that then we would have modified the code to
9 include a -- where we're aggregating by county rather
10 than running it across county as he did. So that would
11 have been in his -- our code, that's what we would have
12 done.

13 Q. Do you recall now which fields were
14 truncated?

15 A. As I recall it would have been in his SQL
16 code, and my recollection is they were code towards the
17 end of the code. I don't remember offhand. It's been a
18 while.

19 Q. Sure. Did the truncation of those fields
20 affect the conclusions he drew from the data?

21 A. No. As I recall they -- in terms of the
22 tables that we regenerated, it did not. As I recall
23 what we were focusing on is whether we could match up
24 the percentages that he calculated. I do recall in a
25 few instances there were a few number differences, small

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1 numbers, because we're talking about three -- let's say
2 if we have 3 million registered voters, it could be off
3 by a few, and that could have been due to the
4 truncation.

5 As I recall in his report he describes how
6 there were 18 individuals with races that didn't make
7 sense to him, and so he would have excluded them. When
8 we frequencied the data, it looked fine; but the key
9 here is where the percentage is, did they match. So
10 that was my focus.

11 So were there anomalies? Yes. Did it impact
12 the percentages? No.

13 Q. And so in -- after you modified the code you
14 were able to duplicate the percentages that Dr. Herron
15 had calculated. Is that fair?

16 A. That is correct.

17 Q. Okay. And did you personally modify the code
18 and reproduce the results that Dr. Herron had generated
19 or was that someone working under you?

20 A. It was not me. It was someone who worked
21 under my direction.

22 Q. But you felt comfortable with the process they
23 used and embraced their results, I take it?

24 A. I looked at the code before -- I looked at the
25 code and the percentages and the numbers, and then

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1 similarly when he modified it by county, again, making
2 sure that an aggregate count matched.

3 Q. We can turn to Section II of your report which
4 is still on Page 6. Excuse me. I have a table that is
5 too small for what I am trying to put on it.

6 Dr. Thornton, one of your critiques of
7 Dr. Herron's report is that under Georgia Law Georgia
8 counties and municipalities have the responsibility to
9 determine the polling place within each district and to
10 make the changes of the polling places. Is that
11 correct?

12 A. Yes. My critique is that he provided --
13 prepared -- relied upon aggregated outcome.

14 Q. "Aggregated" meaning aggregated across
15 counties. Is that accurate?

16 A. Yes.

17 Q. And how did you come to the understanding that
18 Georgia counties and municipalities have the
19 responsibilities to determine the polling places within
20 each precinct? What are you relying upon for that?

21 A. When I reviewed his report, based on my
22 understanding in general, I thought it was odd the way
23 he aggregated. And I asked counsel if there was a
24 statute delineating how polling places are determined,
25 and I requested it.

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1 Q. And counsel provided that statute to you?

2 A. Yes.

3 Q. And that's the statute referenced in the
4 report, 21-2-265. Correct?

5 A. Yes. It's referenced in the materials relied
6 upon, uh-huh.

7 Q. You aren't a lawyer. Correct?

8 A. No.

9 Q. You've read the statute though?

10 A. Yes.

11 Q. Have you read to see if there are judicial
12 opinions interpreting the statute?

13 A. No.

14 Q. And so you're not aware of, for example,
15 whether under Georgia law or federal or constitutional
16 election law there might be exceptions to the statute.
17 Correct?

18 MR. BELINFANTE: Object to the form.

19 You can answer.

20 A. I don't know one way or another.

21 BY MS. EDMONDSON:

22 Q. So you don't have an expert opinion --
23 correct? -- that county officials have unfettered
24 authority to make decisions about polling place
25 locations. Correct?

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1 MR. BELINFANTE: Object to the form.

2 A. I am -- based on -- based on my analysis in
3 terms of my understanding of the statute and the
4 variation by county in these outcomes.

5 BY MS. EDMONDSON:

6 Q. So, Dr. Thornton, is it your opinion that
7 given this statute there could be no meaningful analysis
8 of racial discrepancies and polling place closures at
9 the state level?

10 A. My -- based on my review, it's my opinion that
11 a county-by-county analysis is more useful, more
12 instructive than an overall aggregated outcome; and
13 regardless of a statute, you see tremendous variation
14 from one county to another.

15 Q. So to be clear, even if -- setting the statute
16 aside, you review a statewide analysis here as not
17 useful because of the variation between counties. Is
18 that correct?

19 A. I think it's a combination. One, you have a
20 statute; and two, looking at the data and looking at the
21 variation, there is a substantial variation from county
22 to county. So in statistics when you aggregate outcomes
23 where you have a lot of variation, you can have a
24 misleading outcome and that's what we have here.

25 Q. In statistics are there tools where you have a

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1 great deal of variation in the data to reduce the
2 possibility of a misleading outcome?

3 A. There are ways that you can account for the
4 variation, if that's your question, and that's what I
5 talk about in my report or write about in my report, and
6 in terms of accounting for the variation by county.

7 Q. So it's not the case that you have to just
8 throw up your hands and say that there's no useful
9 analysis that could be done at the statewide level?

10 A. Well, I think in a sense you can look at it by
11 county and then provide statistics that describe the
12 outcomes by county, which is what I've done. So does
13 that give you a statewide look but adjusted for county?
14 Yes, it does. Are there other statistical techniques in
15 terms of inferential statistics, which we don't have
16 here. Dr. Herron hasn't produced inferential
17 statistics. He's provided descriptive statistics. And
18 so as a consequence in reviewing those descriptive
19 statistics what I have done is looked at it by county
20 and then prepared summary statistics that adjust for the
21 county.

22 Q. To be clear, though, you haven't reproduced
23 Dr. Herron's analysis -- each of Dr. Herron's analysis
24 at the state -- at the county-level for each county.
25 Correct? You've looked at a few counties here and there

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1 on an anecdotal basis?

2 A. Actually, that's not correct. So, for
3 example, at Table 3 and at Table 4 I looked at it county
4 by county, and then I summarized what those findings
5 showed.

6 Q. Can you point me to the page of your report
7 that you're referring to for Table 3 and Table 4?

8 A. On Page 13.

9 Q. I see. You're referring to Dr. Herron's
10 Table 3, not your own Table 3. Is that correct?

11 A. That's correct.

12 Q. I see. So you've summarized what the overall
13 count of counties is that fall in one category versus
14 another, but you haven't provided a table listing all of
15 the counties and the results of each county. Is that
16 fair?

17 A. That -- I did not reproduce that, but it is
18 in -- when one runs the --

19 THE COURT REPORTER: I'm sorry, but it is
20 in -- I'm sorry, Doctor. "But it is in" -- what
21 did you say? "One one"?

22 A. What I said is that I did not provide that
23 table as an attachment to the report. When one runs
24 Dr. Herron's code by county we produce an Excel file,
25 just like he does, with those county-by-county results

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1 and it's from those that we then summarize in Paragraph
2 3.

3 BY MS. EDMONDSON:

4 Q. While we're on the topic of county-level
5 decision-making I wanted to look at a paragraph in your
6 rebuttal report for a moment, if you have that handy.

7 MS. EDMONDSON: So let's mark that as Exhibit
8 2 for the record.

9 (Exhibit 2 will be marked for identification
10 and attached to the transcript once received by the
11 reporter.)

12 BY MS. EDMONDSON:

13 Q. For the formalities here, Exhibit 2 is a
14 report that you prepared. Correct?

15 A. Yes.

16 Q. With the assistance of others at BRG who are
17 working under your supervision. Correct?

18 A. That's correct.

19 Q. Okay. If you look at Paragraph 6 and 7,
20 excuse me, at the beginning of Paragraph 7 you state
21 that "Dr. Herron ignores the racial and partisan makeup
22 of each of the county boards of elections involved in
23 the decisions to move or close polling places."

24 Can you elaborate on the relevance in your
25 view of the partisan makeup of county boards of

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1 elections to your analysis?

2 A. Well, in Dr. Herron's report he provides us
3 monolithic statistics across counties. He doesn't
4 adjust for the decision-making of the boards of
5 elections that then result in closures of polling
6 places, changes in polling places, increasing in polling
7 places, and it's those individuals who are making the
8 decisions. So Dr. Herron is looking at it as a
9 monolithic statistic without making any kind of an
10 adjustment for those decisions that obviously results in
11 the outcomes that he is analyzing.

12 So there's no -- essentially what I'm saying
13 is there's no control for county.

14 Q. And looking just at a specific county, if
15 we're just looking at one county, how would the partisan
16 makeup of a county board of elections affect your
17 analysis of that county's decision-making? What would
18 you do to adjust -- how would you use that information
19 of the partisan makeup to adjust the results or adjust
20 your analysis?

21 A. But my statement here is a description of a
22 few examples when I looked at a number of the websites
23 to see that -- what was happening; and my point is that,
24 again, Dr. Herron is looking at it as a monolithic
25 statistic without making an adjustment. So my point is

1 in this description is you have each county making these
2 decisions and in a vacuum of just aggregating it all up
3 you're ignoring those decisions.

4 So my point is that the decision-makers may be
5 basically a equal percentage of the different parties.
6 So again in that light it comes back to what were the
7 reasons for a closure increasing the polling placing or
8 making no changes to the polling places. And so those
9 are the decision-makers.

10 Q. And so is it your view that if a county
11 commission is bipartisan then it's impossible that there
12 is a racially disparate impact in the closing of polling
13 places?

14 A. No, that's not what I'm saying. I'm saying
15 that these are the decision-makers and so one needs to
16 look at what were the reasons for a closure or a move or
17 an increase in the number of polling places, and these
18 are the decision-makers.

19 So you could have an outcome with equal
20 representation and you may or may not have -- and here I
21 want to be clear, disparate impact is not being
22 measured. There are no statistical tests, no
23 inferences, but you could have a difference in a
24 proportion.

25 And so in that instance the question is, well,

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1 why? Why is there a difference? Is it because there
2 needed to be more polling places in particular areas
3 because of population increases? Was there a decrease
4 in the population? What are the reasons? A site that
5 no longer existed? I described some of them in my
6 report and without learning that information one would
7 not know if you have a difference in the percentage, if
8 it is -- race is what Dr. Herron measures or is it
9 something else?

10 Q. And is it fair, then, that your focus was
11 looking at the reason, whether -- excuse me. Withdrawn.
12 Let me restart the question.

13 Is it fair then that your focus was in
14 considering whether race was explicitly a reason why
15 counties chose to close particular polling places?

16 MR. BELINFANTE: Object to form.

17 A. What -- what I am looking at is that
18 Dr. Herron provided statistics generally that are across
19 county, a monolithic set of statistics, and the only
20 factor that he's measuring is race. And what I am
21 looking at is, is there potential for there being
22 factors that could be correlated with race and it is
23 both factors and then not race as he's measured it. So
24 when I say he hasn't adjusted, he hasn't adjusted for
25 any factors. He has just looked at generally statewide

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1 statistics and looked at race.

2 MS. EDMONDSON: So let's go off the record for
3 a moment.

4 MR. BELINFANTE: Okay.

5 THE VIDEOGRAPHER: Off the record. The time
6 is 11:03.

7 (Recess from 11:03 a.m. to 11:11 a.m.)

8 THE VIDEOGRAPHER: We are back on the record.
9 The time is 11:11.

10 BY MS. EDMONDSON:

11 Q. Dr. Herron [sic], if you could turn to Section
12 II of your report, Paragraphs 21 and 22; and I'm going
13 to look in particular at Paragraph 22, but feel free to
14 take a moment to read those over to yourself. I know
15 it's been a while since you wrote them.

16 So in Paragraph 22 you state that "While
17 Dr. Herron depicts variation from county to county, he
18 does not provide by county the equivalent of his overall
19 state statistics that form the basis of his
20 conclusions." And then at the end of the paragraph you
21 say, "As a consequence, Dr. Herron has mis-leadingly
22 masked these county differences through his use of
23 state-wide statistics."

24 And one of the examples you give of
25 information that was misleadingly masked was that

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1 between 2014 and 2018, 36 percent of the counties did
2 not close polling places. And I think you may have
3 anticipated where I am going. Are you getting
4 Dr. Herron's report?

5 A. Well, actually, I thought you were asking me
6 about Exhibit 2 so I'm catching up with you. I
7 apologize.

8 Q. Oh, I'm sorry. Take a moment then, please.
9 I'm sorry. I'm back on Exhibit 1. Take your time. So
10 I was asking about Paragraphs 21 and 22 in Exhibit 1.

11 A. Okay.

12 Q. So to recap, one of the county differences
13 that you say was "mis-leadingly masked" by Dr. Herron's
14 analysis is that between 2014 and 2018 36 percent of the
15 counties did not close polling places. Do you see that
16 in Paragraph 22?

17 A. Yes.

18 MS. EDMONDSON: Okay. So now if we can mark
19 Dr. Herron's report as Exhibit 3, Dr. Herron's
20 first report.

21 (Exhibit 3 will be marked for identification
22 and attached to the transcript once received by the
23 reporter.)

24 BY MS. EDMONDSON:

25 Q. Dr. Horton, I'll ask you to confirm that this

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1 is the report from Dr. Herron that you reviewed?

2 A. Yes.

3 Q. Okay. If you could turn to Paragraph 115 of
4 his report. Are you there?

5 A. I did -- I am.

6 Q. And if you'll see there, Dr. Herron notes that
7 58 counties in the state did not close any polling
8 places between the 2014 and 2018 election. Is it fair
9 to say that those 58 counties are the 36 percent of the
10 159 counties that you referenced in your report?

11 A. Yes.

12 Q. And so looking at this paragraph Dr. Herron
13 did not -- actually included that information in his
14 report. Correct?

15 A. Yes, he did; but the point of Paragraph 22 is
16 that when you look in detail at those overall statistics
17 you have, they're influenced by these counties that did
18 not close -- or did not make any changes.

19 Q. But it is correct that Dr. Herron included in
20 his report the fact that 58 counties did not have any
21 changes -- excuse me, did not close any polling places
22 between 2014 and 2018. Correct?

23 A. He makes that point. My Paragraph 22, the
24 first sentence says, "While Dr. Herron depicts variation
25 by county by county, he does not provide by county the

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1 equivalent of his overall state statistics that form the
2 basis of his conclusions." In other words, he doesn't
3 take the equivalent of the statewide and prepare them by
4 county. So certainly he included the number without a
5 closure, but he does not provide, for example, Table 3
6 by county. That's what I'm describing.

7 Q. But he does include data by county for the
8 percentage of polling places closed; for example, if you
9 look at Figure 2 of his report, which is on the next
10 page.

11 A. Again, what I am talking about here in
12 Paragraph 2 is that the overall state statistics that he
13 relies upon are looking at racial composition, racial
14 differences; and what I am describing here is he doesn't
15 provide those same statistics that are the focus of the
16 report and he asserts are the focus of his report county
17 by county.

18 Q. But it's certainly possible to see from his
19 report that -- and not something he hid or masked or any
20 way -- that there's a great deal of variation between
21 counties and how many polling places they closed.
22 That's clear from his report. Correct?

23 A. He provides the polling places closed by
24 county, yes; but the purpose as I understand of his
25 report is to examine racial composition, that's the

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1 focus. And those same comparisons that he makes --
2 they're not "analyses," they're "comparisons" that he
3 makes -- that form his conclusions he does not provide
4 by county, and it's that overall aggregate outcome masks
5 the individual variation by county. That's what I'm
6 describing.

7 And in my report I clearly state what he
8 provided by county, but he doesn't provide the same
9 statistics that he -- or comparisons that he provides by
10 race, and it's by failing to do that he's masking -- the
11 overall statistics mask what the individual counties
12 look like.

13 Q. Going back to something you said there, I want
14 to make sure that we're using the same terminology. I
15 think you mentioned something that you said it's not an
16 analysis, it's a comparison, and I may have been using
17 "analysis" as a layperson. Does "analysis" have a
18 specific meaning to you that's different from its
19 ordinary meaning in normal conversation?

20 MR. BELINFANTE: Object to form.

21 A. When I use the word "analysis" I am generally
22 referring to statistical analyses from which you can
23 draw inferences. These are -- what Dr. Herron generates
24 are descriptive statistics or descriptive comparisons,
25 they're not analyses. You cannot draw statistical

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1 inferences from Dr. Herron's comparisons.

2 BY MS. EDMONDSON:

3 Q. Can you elaborate on why not for a moment?

4 A. He did not provide a statistical test.

5 Q. Okay. I will try not to use the word
6 "analysis" then; but if I do, you can assume I mean it
7 in the general sense of analyzing something rather than
8 a statistical analysis in particular or at least clarify
9 what I mean by the question. Okay?

10 A. Okay.

11 Q. If we go on to Paragraph 23 of your report,
12 your first report, Exhibit 1, you state that "Because
13 Dr. Herron does not examine the reasons for polling
14 place closures he has," quote, "'inflated' his
15 statistics regarding closure rates." So I want to speak
16 for a moment about what you mean by "closure rates,"
17 what you understand a closure to be here. And elsewhere
18 in your report you put closure in quotation marks, so I
19 want to understand what counts as a closure.

20 I take it that you're not arguing that places
21 like Meadowview Elementary that you highlighted in your
22 report were actually open and used for voting in the
23 2018 election. Correct?

24 A. That's correct, it was not one of the -- it
25 was not a polling place and it wasn't in existence then.

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1 Q. Okay. So the reason it's a -- something might
2 be a "closure," in quotation marks, is not because you
3 have some suspicion that it didn't actually close or
4 become unavailable. Is that correct?

5 A. That's correct. The reason for my use of the
6 word "closure" is I measured closure as Dr. Herron did.
7 He called that a "closure." And as a consequence I put
8 it in quotes because to your point, it wasn't in
9 existence; and if a place isn't in existence to call it
10 a "closure," you know, it's really not a closure, it's
11 just not available. And so because Dr. Herron called
12 these "closures," I used the quotation marks to
13 distinguish.

14 Q. So if you had been undertaking this analysis
15 yourself in the first instance, what do you think would
16 be appropriate to categorize as a closure? What would
17 count as sort of a true closure for the purposes of this
18 analysis?

19 A. Well, as I recall there are 459, quote,
20 "closures" as Dr. Herron has measured; and for those I
21 would want to know for each the reason. And as I stated
22 in my second report it would take more than a Google
23 search. And so what I would want to know is, is it a
24 closure because it just doesn't exist? Is it a closure
25 because it -- the site no longer wanted to serve as a

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1 polling place? I would want to know is it a closure
2 because the building exists but it can no longer
3 function? For example, it may have deteriorated, it
4 isn't safe. I would want to know for each what is the
5 reason.

6 And then from those determine -- for each of
7 those reasons is there -- is there a higher proportion,
8 for example, Caucasian or higher proportion African
9 American registered voters at each of those sites? In
10 other words, what are the reasons for each and then what
11 is the racial makeup of those registered voters. And
12 without knowing each of those reasons, I don't -- I
13 don't know the reasons, that's what I would want to know
14 so that you could then filter out what would have --
15 what is the -- to the extent there is a difference by
16 race, is it because of a particular reason or not.

17 Q. So is it fair to say that the categories you
18 listed -- that a polling place might not exist; that it
19 might exist but no longer want to serve as a polling
20 place; or is dilapidated or unable to function as a
21 polling place -- that for your purposes those would be
22 irrelevant to the analysis of whether there was a
23 disparate racial -- I don't want to use the term
24 "disparate impact" because you alluded to it having a
25 specific meaning, but is that irrelevant to the decision

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1 of whether -- actually, I'm sorry. Let me withdraw that
2 whole question because I got myself a little tied up in
3 knots there.

4 My question is basically, if you remove those
5 categories of polling places that are unavailable for
6 one reason or another, would it be your intent only to
7 look at the remaining polling places that were closed as
8 a result of an entirely voluntary decision on the part
9 of the county officials that those would be the only
10 relevant polling places to look at?

11 A. I would want to know if there -- if it is
12 correlated with the racial makeup in terms of the
13 reason. In terms of all the reasons, based on the list
14 that you've given, those are perhaps some of the reasons
15 that are basically out of the control of the county
16 board of elections. There may be others that I don't --
17 am not aware of or haven't thought of, but if one wants
18 to know the decisioning, then I would want to
19 distinguish between those that are basically out of the
20 control of the county in terms of the closure -- I
21 should say, quote, "closure."

22 Q. So if you were doing this in the first
23 instance, if I understand correctly, that you would look
24 at each category of reason for closure as best as you
25 could figure it out, and then look at the racial impact

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1 for each of those categories or the racial makeup for
2 each of those categories. Is that fair?

3 A. Yes, and I'd want to do it by county because
4 the racial makeup of each county is different.

5 Q. If you were going to do that analysis how
6 would you undertake to see whether a particular county's
7 stated reason for closure might be pretextual? For
8 example, would you have any concern that a county might
9 take a position that a polling place was dilapidated
10 even though it could perhaps still serve as a polling
11 place?

12 MR. BELINFANTE: Object to the form.

13 A. I don't -- I would want to just first look to
14 see what the statistics showed to see if what the racial
15 differences are by county within each of those
16 categories.

17 BY MS. EDMONDSON:

18 Q. So when you say that Dr. Herron's statistics
19 regarding quote/unquote "closure rates" are inflated, is
20 it fair to say that you're not disagreeing with his
21 calculation of closure rates given the definition of
22 closure that he's using? You agree with that given his
23 definition of closure?

24 A. Based on his definition of closure that
25 includes sites that no longer existed or could no longer

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1 serve for various reasons, he's calculated 459; but in
2 terms of what one would think of as a "closure," meaning
3 you have a site and the decision is made "we're no
4 longer going to use it," and there isn't a reason that
5 I, for example, described amongst those, then it would
6 be -- the 459 would be inflated, and therefore the rate
7 would be inflated.

8 Q. So is it fair to say you don't disagree that
9 there are 459 closures under his definition of
10 "closure." Correct?

11 A. As best I -- as best I recall.

12 Q. But your contention instead is that he's using
13 the wrong definition of "closure" for any kind of legal
14 relevance here. Is that fair?

15 A. Well, I'm not an attorney, but in terms of
16 from a usefulness of a statistic -- and here we're
17 looking at -- or what he is looking at is an overall
18 statistic -- to the extent that he is including sites
19 that were closed that are outside of the control of the
20 county board of elections, then I don't know how useful
21 those statistics are.

22 Q. How useful they are to determine what?

23 A. How useful they are to determine, based on his
24 overall statistics or on a county bilevel, whether or
25 not there is a difference in -- by race as he's

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1 calculated it.

2 Q. I think a minute ago you posited that there
3 might be correlations on the basis of race for some of
4 the other categories why a polling place might be
5 closed; for example, that it might not exist. Is that
6 fair?

7 A. I think I would describe it differently.

8 Q. That's fine.

9 A. What I said is that what we don't know is if
10 the -- if the reasons for closures, if there's variation
11 by race in the reasons, we don't know. To the extent
12 that there is a different by race and the reasons within
13 a county, then the question then becomes if you
14 controlled for those reasons would you then have a race
15 effect.

16 So in Dr. Herron's analyses -- and I'm using
17 your word "analysis" -- in his comparisons he's looking
18 at all 459 closures and asking the question, "Is there a
19 difference?" He's not filtering out, "Is it race?" as
20 he's measured it, or "Is it something correlated with
21 race?" and we don't know that. And he's making the
22 assumption in a second report as he recalled -- if I
23 recall, he's assuming that it's uniform by race, but he
24 hasn't tested that. And so as a researcher one would
25 want to know in terms of the distributions that he's

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1 calculated is it race or is it something correlated with
2 race.

3 Q. So in looking at the -- you give three
4 examples of polling places that existed in 2014 but were
5 torn down or otherwise unavailable to serve as polling
6 sites; that's at 24 to 2016 of your report. Sorry, 24
7 to 26, pardon me.

8 How did you locate these three examples that
9 you've included in your report?

10 A. Well, I make clear that -- or if -- this isn't
11 a scientific sample. I wanted to illustrate his
12 definition of "closure," what, you know, it included.
13 So I focused on Fulton and DeKalb County. You have -- I
14 believe as I recall those were the counties with the
15 most closures.

16 So I just asked an analyst to go and look at
17 Google in the maps and just see if there were places in
18 a county that were polling places that were closed where
19 you could clearly see that they were demolished. I
20 said, "Just look to see if you can find a couple of them
21 to illustrate the point." It was by no means to be a
22 survey or a statistical sampling. Given the small
23 numbers of polling places within a county, closures, to
24 do a scientific sample in all likelihood you'd actually
25 have to sample all 459. If you wanted to have a

1 scientific study or sampling, as Dr. Herron alludes to,
2 you need to do a stratified sample and the numbers are
3 just so small you'd have to find out the reason for each
4 of the 459.

5 So to answer your question, I focused on those
6 two counties because I knew there would be quite a few,
7 I knew the numbers, and just asked the researcher to see
8 if they could find a few to illustrate the point.

9 Q. And because it was an illustration you didn't
10 ask the researcher, I take it, to also include examples
11 where the researcher couldn't locate any alternative
12 reason why the polling place became unavailable.

13 Correct?

14 A. There's no way to find that out through Google
15 search, maybe Google Maps. All we could do is look to
16 see, "Is this a place? Is it there? Is it open?"

17 Q. Okay.

18 A. You can't find through Google Maps each of the
19 reasons.

20 Q. Just circling back for a moment, in your focus
21 on the decision-making of the counties, is it fair to
22 say that by -- that your focus is whether the decision
23 to close a polling place could have been motivated by
24 racial animus on the part of the county officials
25 charged with making the decisions?

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1 A. Well, Dr. Herron's comparisons are examining
2 race across the state and in those statistics he's
3 including closures that are outside of the control of
4 the county boards of election. So a more appropriate
5 analysis is to determine after controlling for the
6 factors -- you know, determining what the factors are
7 for each, and then determining is there a race effect as
8 he has measured it by county.

9 MS. EDMONDSON: Can I ask the court reporter
10 to read back that response, please?

11 THE COURT REPORTER: Yes, ma'am.

12 "Answer: Well, Dr. Herron's comparisons are
13 examining race across the state and in those
14 statistics he's including closures that are outside
15 of the control of the county boards of election.
16 So a more appropriate analysis is to determine
17 after controlling for the factors -- you know,
18 determining what the factors are for each, and then
19 determining is there a race effect as he has
20 measured it by county."

21 BY MS. EDMONDSON:

22 Q. Okay. If you could go to Section III of your
23 report. We're looking at Paragraph 27. I'm looking at
24 the third sentence, you see there, "Given that voter
25 participation for the 2016 presidential election was

1 higher than the 2018 mid-term election, it is likely
2 that voters whose polling place changed prior to the
3 2016 election and who then voted in 2016 would have
4 known of their new polling place at least two years
5 prior to the 2018 election."

6 So I take it from that sentence that you're of
7 the view that one reason why changes in polling places
8 might affect voter turnout is that voters might not know
9 of their new polling place before the election.

10 Correct?

11 A. It's a possibility, yes.

12 Q. Are there any other reasons why closing of
13 polling places might affect further turnout?

14 A. I don't know all the reasons for voter
15 turnout. Could you ask me the question again?

16 Q. Sure. Is there any reason why closing a
17 polling place -- sorry. Withdrawn.

18 You mentioned one reason why closing a polling
19 place might affect voter turnout, which is that voters
20 might not know where to go on election day. What I am
21 asking is whether you can think of any other reasons why
22 closing a polling place might affect voter turnout?

23 A. Well, you could close a polling place or
24 move -- and then move it, which would be included among
25 Dr. Herron's reasons, and make it in a more convenient

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1 place for registered voters and it could then perhaps
2 increase. So, you know, again, there are reasons that
3 could increase or decrease voter turnout from a closure.

4 Q. And conversely, if you were to close a polling
5 place and the new polling place was farther away, that
6 might decrease the likelihood that a particular voter
7 might show up to vote on election day. Is that fair?

8 A. May or may not.

9 Q. Or if -- I'm sorry. Go ahead.

10 A. It could be further away, but in terms of
11 getting there, you know, ease of transportation, all of
12 those reasons that, you know, Dr. Herron didn't analyze,
13 I didn't look at it, there's a whole set of reasons that
14 could influence the location. It could be better
15 parking, for example, could influence it.

16 Q. So it's fair to say that there are a whole set
17 of reasons, other than not knowing where your new
18 polling place is, that could affect voter turnout from
19 closing a polling place; either increasing it as you're
20 mentioning or decreasing it. Correct?

21 A. That's correct.

22 Q. And you acknowledge that 30 percent of
23 counties did have a reduction in the total number of
24 polling places from 2014 to 2018. Correct? I'm taking
25 that statistic from Paragraph 22 of your report, if I've

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1 understood it correctly.

2 A. Yes, I believe 30 percent had a reduction.

3 Q. Several of those counties in the 30 percent of
4 counties closed more than one polling place. Correct?

5 A. I believe so.

6 Q. Okay. So would you agree that it stands to
7 reason that at least in those counties that had a
8 reduction in the total number of polling places that
9 closures of polling places meant that some people had to
10 travel farther to those?

11 A. I don't know.

12 Q. You think that's possible that they could have
13 reduced the total number of polling places in a county
14 and no one had to travel farther to vote?

15 A. There's likely to be some portion, but I don't
16 know specifics.

17 Q. You don't know what portion, but there's
18 likely to be some portion?

19 A. I have no way of knowing one way or another.

20 Q. You didn't undertake that analysis?

21 A. No. I was responding to Dr. Herron's report.

22 Q. Okay.

23 A. Or I should say I was reviewing Dr. Herron's
24 report.

25 Q. If we look at Paragraph 29 of your report, as

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1 I read it this paragraph includes a critique that
2 Dr. Herron's analysis of voters who had their polling
3 places closed is flawed because he didn't in this
4 analysis of closures remove voters who moved, and as a
5 consequence their polling place would have potentially
6 changed regardless of the closure.

7 Is that fair that that's the critique you're
8 setting forth here?

9 A. Yes. Here he's including as I recall the
10 registered voters who moved.

11 Q. And in your view that's particularly
12 problematic because according to census data a higher
13 percentage of African Americans moved versus Caucasians
14 moved. Is that accurate?

15 A. Well, regardless of the racial composition, if
16 you're -- if you moved, then there is a higher
17 probability of a change in your polling place. So to
18 look at the impact of closures as Dr. Herron has done,
19 he would have included individuals who may or may not
20 have been impacted by that closure.

21 Q. It wouldn't be that 100 percent of registered
22 voters who moved who would be affected. Right? Because
23 some people might have moved within the same precinct.
24 Correct?

25 A. Certainly.

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1 Q. And those people who moved within the same
2 precinct would be affected by a precinct closure, taking
3 his definition of "closure"?

4 A. That's correct.

5 Q. And I take it you don't have any statistics
6 and perhaps there aren't any available on what
7 percentage of Georgians who moved or African-American
8 Georgians who moved within a precinct?

9 A. I do not know that.

10 Q. Dr. Thornton, is it your position that when a
11 polling place closes within a precinct that closure has
12 no effect on voters moving into that precinct?

13 MR. BELINFANTE: I'm sorry. Could you repeat
14 the question?

15 MS. EDMONDSON: I'm going to ask the court
16 reporter to read it back because I'm not sure I
17 can.

18 MR. BELINFANTE: Okay. Thanks.

19 THE COURT REPORTER: Yes, sir.

20 "Dr. Thornton, is it your position that when a
21 polling place closes within a precinct that closure
22 has no effect on voters moving into that precinct?"

23 MR. BELINFANTE: Object to form.

24 You can answer.

25 A. It -- I want to make sure I understand the

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1 question. Are you asking me if a precinct closed -- or,
2 pardon me, a polling place has closed and so there is a
3 new polling place, and then someone moves into that area
4 so then his or her polling place is the new polling
5 place, would the closure have an influence? Is that the
6 question?

7 BY MS. EDMONDSON:

8 Q. Yes.

9 A. Well, if I wasn't aware of the prior polling
10 place and I moved into a new -- I've moved in and so
11 I'm -- now I'm aware of my new polling place, I don't
12 know what the impact of the closed polling place would
13 be on the individual. I -- I don't know.

14 Q. But if the -- looking at the total number of
15 polling places as we did just a moment ago, if the new
16 polling place was less convenient than the old polling
17 place had been, that might mean that the person moving
18 into this precinct might be less likely to vote than if
19 the polling place had never been closed. Is that
20 fair?

21 A. It's a possibility, keeping in mind that the
22 individual may not have been aware of the prior polling
23 place so if he or she chose to vote, then they would be
24 aware, based on your example, of the new polling place.
25 An individual may choose to vote for all hosts of

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1 reasons.

2 Q. So this critique -- I want to understand the
3 scope of this critique about including movers in the
4 analysis of closures. Dr. Herron performed three
5 different methodologies of comparing or addressing
6 polling place closures by race. Correct? He looked at
7 racially homogenous black groups from the census, he
8 looked at voter file comparisons, and then he looked at
9 black majority precincts. That's a fair description of
10 his three different methodologies broadly stated?

11 A. I need to have his report in front of me to
12 answer that.

13 Q. Sure. Please feel free to look. I will tell
14 you I believe it is at -- if you look at Paragraph 107.

15 A. Okay.

16 Q. So looking at Paragraph 107 is it accurate
17 that Dr. Herron purported at least to look at the issue
18 of polling place closures in Georgia by race in three
19 different ways: looking at census block groups;
20 comparison of various voter files; and then, three,
21 analysis of majority black polling places in Georgia?

22 A. Yes, as described in Paragraph 107.

23 Q. Okay. And your criticism about the inclusion
24 of registered voters who moved I want to understand
25 which of Dr. Herron's assessments that criticism applies

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1 to? Does it apply to all three assessments or does it
2 apply only to the comparison of the voter files?

3 A. It has -- it is mainly my criticism is in
4 relation to Table 3 because the question becomes if one
5 was to have removed those individuals, how would it have
6 changed the distribution.

7 Q. And you did an analysis of that for how it
8 would change Table 3. Correct?

9 A. No, I did not. What I said is that it
10 would -- it would -- the -- providing the Bureau of
11 Census data is to show that that distribution of movers
12 is different by race; and consequently, you would expect
13 the distribution that Dr. Herron produced at Table 3
14 would also change.

15 Q. But you concluded that that difference in the
16 rate of movement would more than offset the difference
17 that he reported in Table 3. Correct?

18 A. You would expect it to perhaps do that.

19 Q. So you're not sure that it would offset that
20 difference, but you would expect that it would offset
21 that difference?

22 A. What I'm saying is that it more than offsets;
23 and based on his other charts, one can see that when he
24 removed nonmovers the distribution does change. It
25 becomes less African American.

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1 Q. All I'm trying to ask right now is, did you do
2 the analysis to know that it off -- that the rate of
3 moving offsets the difference -- the .12 difference he
4 found; or are you saying that given the numbers, you
5 would expect, perhaps strongly, that it would offset
6 that difference?

7 A. What I'm saying is that I haven't tested it;
8 but based on the Bureau of Census data we know that
9 African Americans move at a higher rate, and therefore
10 there is the potential that it would offset the
11 difference. And from his other charts you can see that
12 the percentage of African Americans when you remove
13 nonmovers does go down. I should say "when you remove
14 the movers." I apologize.

15 Q. Understood. No problem.

16 MS. EDMONDSON: We've been going about another
17 hour. Should we not take another quick break?

18 THE WITNESS: Yes. May I ask a question?

19 MS. EDMONDSON: Sure. Although perhaps we
20 should go off the record first if it's a logistical
21 question.

22 THE VIDEOGRAPHER: Going off the record. The
23 time is 11:59.

24 (Recess from 11:59 a.m. to 12:07 p.m.)

25 THE VIDEOGRAPHER: Okay. We are back on the

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1 record. The time is 12:07.

2 BY MS. EDMONDSON:

3 Q. Hello, again. If we can turn to Paragraph 30
4 of your report. Paragraph 30 includes the statement
5 that "Among the 101 counties with at least one closure,
6 54 (or 53.5%) have a higher proportion of Caucasian
7 registered voters with a closure compared to the closure
8 of African-American registered voters."

9 My first question is just a clarification. I
10 take it you mean compared to the proportion of African
11 American registered voters with a closure. Is that
12 fair?

13 A. Yes. So to be clear, for each county with a
14 closure, counting the percentage of among African
15 Americans of their proportion with a closure as measured
16 by Dr. Herron as compared to among Caucasian the
17 proportion of Caucasian registered voters with a closure
18 as identified by Dr. Herron.

19 Q. Understood. I just wanted to clarify that it
20 wasn't compared to the proportion of African American
21 registered voters in the county more generally, that it
22 also relates to the closures.

23 What data does this analysis in Paragraph 30
24 use?

25 A. It's the data -- it's the data -- same data

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1 relied upon by Dr. Herron in his preparation of Table 3.

2 So it's essentially taking Table 3 of Dr. Herron's --

3 the code from his Table 3 and running it by county.

4 Q. And so Table 3 is the comparison Dr. Herron
5 does on the basis of comparing the 2014 voter file by
6 race group to the 2018 voter file by race group.

7 Correct?

8 A. Table 3 is looking at polling place closure
9 rates by race.

10 Q. But based on a comparison of the 2014 and 2018
11 voter file. Correct?

12 A. Yes.

13 Q. So for this analysis why did you focus on the
14 101 counties with at least one closure as opposed to the
15 total number of counties?

16 A. Well, because for the remaining you would have
17 had a zero percent closure rate for both African
18 Americans and Caucasians, so there's no comparison.

19 Q. Just because the two rates are the same?

20 A. Yeah, there's no information to glean.

21 Q. Did you look to see whether the rates of
22 closures were the same for any other counties; whether
23 there happened to be, for example, a 5 percent closure
24 rate for African Americans and a 5 percent closure rate
25 for Caucasians and exclude those counties from the

1 analysis too?

2 A. No, because in here we're looking at closures;
3 and so if the rate of closure is the same, meaning there
4 are no closure decisions, there's nothing to compare.
5 On the other hand, there is variation from county to
6 county and we're looking then at where decisions were
7 made to close -- using Dr. Herron's measure of
8 "closure" -- when you had a decision, what is the
9 closure rate by race.

10 Q. Did you analyze at all the racial composition
11 or racial demographics of the 58 counties that had no
12 closures?

13 A. No. I know that there was variations.

14 Q. So you did analyze the racial demographics of
15 those 58 counties at least enough to know that there was
16 some variation in their racial demographics?

17 A. When I looked at the output that we generate
18 for Table 3 by county, you can see that there's
19 variation.

20 Q. So I may be misunderstanding you. I'm asking
21 you generally -- not with respect to closures -- just
22 what the racial demographics are of the 58 counties that
23 did not have any closures for everyone in that county?

24 A. Well, the information from -- that you
25 generate from Table 3 that we produced you can see if

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1 there's diversity amongst the 159 counties and included
2 in those are the 58.

3 Q. Okay. So from that information you looked
4 enough at that to know, for example, that the 58
5 counties were not -- that had no closures were not the
6 58 most African-American counties in the state, for
7 example. There was diversity among them?

8 A. There's diversity.

9 Q. Okay. But you don't recall what the -- you
10 didn't create a table or otherwise undertake a
11 systematic review of the demographics of those
12 counties?

13 A. No. I just saw that there was diversity, but
14 the focus is where the county for which there was a
15 decision made to close a polling place as defined by
16 Dr. Herron.

17 Q. And this annual -- this review or comparison
18 that you did in Paragraph 30, this is essentially
19 counting counties. Correct? It doesn't take into
20 account the degree to which a particular county might
21 have more Caucasian registered voters with a closure
22 compared to African American registered voters with a
23 closure?

24 A. No, it's counting -- it's showing that -- it's
25 showing that those overall statistics when you bring it

1 down to a county-by-county comparison where you have
2 closures, you have about the same proportion of county
3 having a -- in about half the counties it's a higher
4 proportion Caucasian and another little less than half
5 you have African American -- higher closure rates among
6 African Americans.

7 Q. But if a particular county had -- let's take
8 an example where one county had -- County A had 1
9 percent more Caucasians than African Americans affected
10 by closures, and County B had 20 percent more Caucasians
11 than African Americans affected by closures. Each of
12 these would just show up in this analysis as the same --
13 right? -- as a county that had more Caucasian than
14 African Americans affected by closures. Is that fair?

15 A. It's counting which ones are higher and which
16 one's lower.

17 Q. But not taking into account the degree of
18 difference?

19 A. No, it -- it's counting.

20 Q. Then you reference the fact that if Bibb
21 County is removed from Dr. Herron's analysis, the
22 polling place for closure rate for black and white
23 voters flips.

24 How did you come to choose to remove Bibb
25 County from the test data?

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1 A. So when I was looking at the individual lines
2 for each county I noticed that, you know, four counties
3 comprised about 30 percent of the population of African
4 American and registered voters. So I wanted to look at
5 a county proofing that was smaller than that proofing.
6 And when I looked at Bibb's, it's the next county down
7 that list with the highest -- higher numbers of
8 closures.

9 So the more populous counties, like Fulton,
10 DeKalb, Cobb, Gwinnett -- I believe I'm forgetting one,
11 I apologize, but in the Atlanta area -- they comprise
12 about a third of the registered voters, and they have
13 varying degrees of closures. And so relative to those
14 counties Bibb is a smaller county and it had a higher
15 number of closures relative to some of those counties in
16 that Atlanta area.

17 So I was curious. This is a county that had
18 more closures, what would happen if you removed it? So
19 when I say it's smaller, it's smaller relative to those
20 that have -- are, you know, far more populous, and it
21 had -- Bibb had a higher closure rate, relatively
22 speaking. So I wanted to take a look to see what's the
23 influence.

24 In statistics we have something called
25 "Simpson's paradox." So here Dr. Herron has one

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1 aggregated outcome, and you can have an aggregated
2 outcome mask the individual variation.

3 And so what I'm illustrating here is how you
4 can have a lot of variation county by county and that's
5 why it's important to look at it county by county; and
6 to illustrate if you remove this one county that is
7 relative to this larger counties, has a -- it's smaller
8 but has a relatively higher number of closures, what
9 would the influence be?

10 Q. And so in choosing Bibb County one of the
11 reasons you chose Bibb County was that it did have a
12 relatively high closure rate. Is that fair?

13 A. It had numerically more of the closures.

14 Q. Did you -- do you know how Bibb County
15 compares to other counties in Georgia in terms of its --
16 the percentage of its population that is African
17 American?

18 A. As I recall -- I don't remember specifically,
19 but I recall it being perhaps -- perhaps more African
20 American relative to some counties.

21 Q. After you had done the analysis with Bibb
22 County did you do a similar analysis removing any other
23 counties from the analysis; or did you do a review of
24 removing any other counties from the calculations?

25 A. No. I described my -- my logic of why I chose

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1 Bibb and -- relative to those other counties, and it was
2 to illustrate how having an aggregate outcome as
3 Dr. Herron had used can result in a misleading outcome
4 because county by county there is a lot of variation.

5 Q. There's also a lot of variation in Georgia
6 about racial demographics by county. Correct?

7 A. Sure, and that's one reason why you'd want to
8 look at it county by county.

9 Q. Elaborate on that, please.

10 A. Well, again, Dr. Herron has this aggregated
11 outcome and you do not know based on what he's depicted
12 in his chart -- for example, on Table 3 -- is it
13 influenced by one county? Is it influenced by all the
14 counties? In other words, do you have the outcome that
15 he shows which is -- I apologize, I have to go back to
16 his --

17 Q. No problem.

18 A. -- he calculates at Table 3 a .12
19 percentage-point difference. If you looked at it by
20 county, would you come to that same conclusion or a
21 similar conclusion if you looked at it county by county;
22 or is it that there's a particular county or group of
23 counties that are influencing that outcome? And that's
24 why it's relevant to look at it county by county.

25 Q. Okay. Let's do one more thing before lunch,

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1 if that works. Let's move on to ... one moment, please.

2 MS. EDMONDSON: Actually, I think if we can
3 break now it will be a little bit more efficient,
4 if that suits everybody? Is that okay?

5 THE VIDEOGRAPHER: We're going off the record.
6 The time is 12:24.

7 (Recess from 12:24 p.m. to 1:02 p.m.)

8 (Ms. Bryan is no longer present.)

9 THE VIDEOGRAPHER: We are back on the record.
10 The time is 1:02.

11 BY MS. EDMONDSON:

12 Q. Good afternoon, Dr. Thornton.

13 A. Good afternoon.

14 Q. Dr. Thornton, now I want to move on to
15 Paragraphs 31 and 32 of your report. And these
16 paragraphs address Tables 4 through 6 of Dr. Herron's
17 report. And I just want to confirm tables -- this --
18 these two paragraphs represent a critique of
19 Dr. Herron's analysis of how polling place closures
20 affected African Americans if you focus on the issue of
21 how majority black polling places were affected. Is
22 that your understanding as well?

23 A. Yes. It's an aggregate analysis based on his
24 measurement of -- his definition of African-American
25 polling places.

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1 Q. Okay. And is it fair to say here that the
2 analysis you performed or the review you did is similar
3 to the review we just talked about before lunch, that
4 you removed those polling places -- excuse me, those
5 counties that had no closures and then counted how many
6 of the remaining counties had more -- counted the
7 closure rate in the remaining counties?

8 A. It's looking at a subset of the 101 because I
9 did not want to include instances in which you did not
10 have at least one majority African-American polling
11 place using his threshold.

12 Q. Okay. And is it fair to say that the same
13 reasons you gave a moment ago about why it's fair to
14 leave out the counties with no closures would also apply
15 to this analysis?

16 A. Well, I did not want to mislead by including
17 counties without a majority African-American polling
18 place because if you -- if I included those then the
19 Caucasian closure rate would have been higher than the
20 53.5 percent that I calculated here.

21 Q. Okay. I understand that, I think. Is it fair
22 to say, then, that your -- the only criticism in your
23 report of Tables 4 through 6 in Dr. Herron's report is
24 that it's inappropriate to aggregate the data across
25 counties and that it's more appropriate to look at it on

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1 a county-by-county basis?

2 A. My criticism is that he does not -- that he
3 masks the variation and he calculates the higher closure
4 rate based on his threshold that includes groups that
5 for which there were not any decisions made and
6 includes -- and so in this instance you're not -- he did
7 not adjust for the county variation.

8 Q. And that's a criticism you're making I
9 understand in Paragraphs 31 and 32. My question is, I
10 don't believe that there are any other criticisms of
11 Tables 4 through 6 in your report? And if you disagree
12 with that, I'd like you to tell me.

13 A. Well, I believe that there's an overarching
14 point that I make regarding closures that we -- you
15 asked me about earlier today; and that is, Dr. Herron is
16 including closures that are out of the control of the
17 county boards of elections. So to the extent that those
18 closures are correlated in some way with race, then his
19 outcomes and his conclusions could be different.

20 Q. But if we accept for the moment Dr. Herron's
21 definition of "closures" for the purposes of discussion,
22 you don't have any quarrel with Dr. Herron's
23 calculations in Tables 4 through 6. Is that fair?

24 A. If you're asking me if arithmetically he has
25 distribute -- calculated in terms of the 459, then

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1 arithmetically I do not know of an error. In terms of
2 his methodology, that's what I'm critiquing overall.

3 Q. And you have essentially two critiques of the
4 methodology. One is the definition of "closure," and
5 one is that you don't think it's appropriate to
6 aggregate across county lines.

7 Are there any other critiques of the
8 methodology that you would offer?

9 A. Well, as I alluded to earlier today and in my
10 report, my first report, is he's not only provided
11 statistics or a few statistics here that are
12 cross-county, but he also has gone from 2004 to 2008 and
13 he doesn't distinguish 2016. And that is an arc -- a
14 point that I've made in general because his entire
15 report is 2014 to 2018.

16 Q. And does that criticism apply to Tables 4
17 through 6 as well as -- I understand that it applies to
18 Table 3. Does it also apply to Tables 4 through 6?

19 A. Certainly.

20 Q. And why is that since Tables 4 through 6 focus
21 on the overall racial makeup of polling places rather
22 than a particular -- looking at a particular voter?

23 A. Well, as I understand what Dr. Herron is
24 attempting to measure is he wants to know if there
25 are -- he is measuring whether there is a difference by

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1 race in closure. And the -- as I understand the issue,
2 it's particularly in relation to what happened in 2018.
3 So as a consequence he's mixing activity that happened
4 between the 2014 midterm and the general election and
5 presidential election in 2016 with the presidential
6 election in 2016 and the 2018 midterm.

7 So the question is, is the pattern that he
8 calculates looking across that four-year time period, is
9 it the same pattern from 2014 to 2016 or 2016 to 2018?
10 And throughout his initial report he did not look at
11 that question because the question is, is there
12 consistency in his statistics in that time period or is
13 there a shift, is there a difference?

14 Q. And in your view what is the proper unit of
15 time to look at this under? Should we look at the
16 differences between a midterm and a presidential
17 election like every two years, every one year, every
18 month? How consistent -- what is the unit across which
19 it must be consistent to be useful?

20 A. Well, the question here is if -- he's combined
21 different activities and different decisions, and so as
22 a consequence -- and what he's done is he's masked the
23 difference between 2014 and 2016, and 2016 and 2018.
24 Why he does -- did that, I don't know.

25 Q. But what do you think is the proper way to do

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1 it? What would answer the question?

2 A. Well, I think it's important to take a look to
3 see if there is a difference. So the proper thing to do
4 is to not make an assumption of grouping it altogether.
5 It's important to see where you have these events --
6 2014, 2016, 2018 -- what changed.

7 Q. So stepping back for a moment, so we've talked
8 about Table 3 of Dr. Herron's report and Tables 4
9 through 6. Other than your overarching criticisms of
10 Dr. Herron's total approach, I don't believe that you've
11 offered any criticisms of his analysis of the census
12 block -- of looking at the issue of race through
13 racially homogenous census blocks. But if that's
14 incorrect, please let me know. That would be his Table
15 2.

16 A. At Paragraph 26 I discuss that Dr. Herron
17 himself testified that "most registered voters in
18 Georgia 'do not live in racially homogeneous census'"
19 group blocks -- "'census block groups,'" pardon me. So
20 as a consequence it raises into question the value of
21 his analysis because he's looking at a very small
22 proportion based on what he testified and one can see
23 that there's quite a range.

24 So at 95 percent racially homogeneous you have
25 a -- pardon me -- so at 95 percent you have a different

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1 conclusion than you do at 99 percent or 100. So it --
2 as expected you're going to have a difference as you
3 go -- become more and more, you know, at 100 percent
4 African American or 100 percent Caucasian.

5 So to his point you're looking at a relatively
6 small proportion of the population of registered voters
7 for me to these categories based on his own testimony;
8 and as I point out, this analysis includes among the
9 closures those polling places that are closed outside of
10 the control of the boards of elections.

11 Q. Did you undertake your own analysis of how
12 many voters in Georgia live in racially homogeneous
13 census block groups?

14 A. No, I did not.

15 Q. Did you add up the numbers in Table 2 to see
16 the total number of voters according to Dr. Herron's
17 data that live in racially homogeneous block groups?

18 A. I did not. I replicated his table.

19 Q. So you have no quarrel with the individual
20 rows of data in his table as far as an arithmetic
21 matter? I understand you might have criticisms of the
22 methodology that led him to identify those as relevant.

23 A. If you're asking me if his code did what it
24 was asked to do and it arithmetically matches the
25 output, then it matches.

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1 Q. So I'm not going to ask you to do the math or
2 the input right here, but looking at the numbers now
3 would it surprise you if I represented to you that
4 according to these numbers it's approximately 2.5
5 million people in - voters in Georgia who live in
6 racially homogeneous census block groups?

7 A. I would disagree with that calculation because
8 the individual in -- in, for example, cut off 2 --
9 pardon me, cut off the -- those at 100 are included in
10 the 99, 98, 97, 96, and 95 categories. Those in 99 are
11 included in 98, 97, and 96 and 95 cutoff, so on and so
12 forth. So 96 is included in the 95, so that would be
13 incorrect.

14 Q. I see.

15 Okay. So if we move on to Section IV of your
16 report, if you look at paragraph thirty -- it's
17 essentially Paragraphs 33 through 35, but I'm going to
18 focus on Paragraph 35 and the table.

19 So if you look at Paragraph 35, like the
20 earlier discussions we talked about, in this analysis
21 you removed the 31 counties who had no changes to their
22 polling places between 2014 and 2018. And I take it
23 that your reasoning for that choice is the same or
24 similar as what you offered about the 58 counties that
25 had no polling place closures earlier in the report,

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1 that those counties without any changes to their polling
2 places are not relevant to this inquiry. Is that fair?

3 A. That is correct. There's no decision made --
4 there were no decisions made by the board -- county
5 board of elections that influenced the placement of
6 polling places.

7 Q. Okay. But here in Table 1 you're doing
8 something a little different than you did when
9 discussing the polling place closures because you're not
10 just counting the number of counties that have more --
11 higher percentage of African-American closures versus
12 Caucasian closures. You're actually recalculating the
13 percents across the counties. Correct?

14 A. Yes. I'm looking at the -- Dr. Herron's Table
15 9 and removing from his Table 9 the 31 counties.

16 Q. And so here can you explain why it's
17 appropriate when you're recalculating Table 9 to remove
18 the 31 counties that did not have any changes to their
19 polling places?

20 A. Well, the 31 counties, regardless of their
21 racial composition, there's no decisioning, nothing was
22 changed. No new polling places. No closures. No moved
23 polling places. So there's no decision because then
24 races -- Dr. Herron is looking at a distribution, it has
25 no -- no -- there's not contributing from those

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1 counties.

2 So here I'm looking at those counties where a
3 decision was made regarding a new polling place, a
4 change in polling place, a closure altogether without a
5 replacement and looking at that question because these
6 are the decisions, these are the counties for which
7 decisions were made.

8 Q. But if you look at the column in your table
9 you have the breakdown of voters who did not have a new
10 polling place by Caucasian, African American, et cetera.
11 But there are voters who lacked a new polling place in
12 the 31 counties that you omitted. Correct?

13 A. Can you say that again? I could not hear
14 that.

15 Q. Sure. So there's a column in your Table 1
16 that refers to the racial distribution of those voters
17 who did not have a new polling place. That's the "Not
18 New Place" column in your Table 1. Correct?

19 A. Yes.

20 Q. But there are registered voters in the 31
21 counties -- in fact, all the registered voters in the 31
22 counties -- who did not have a change to their voting
23 place who aren't included in this table. Correct?

24 A. And they're not included because those
25 counties did not have any in the "New Place." They're

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1 only in the "Not New Place." No decisioning was being
2 made. So by including them it inflates the "Not New"
3 percentages.

4 Q. And since removing the 31 counties increases
5 the relative percentage of white voters with changes
6 versus black voters, we can assume as a matter of math
7 that the 31 counties with no changes are
8 disproportionately white compared to the rest of Georgia.
9 Correct?

10 A. Slightly.

11 Q. But definitely disproportionately white, even
12 if "slightly"?

13 A. By a -- if I recall -- hold on. By about 1
14 percentage point.

15 Q. But enough to make the difference that you
16 think is important to change Table 9 into your Table 1.
17 Correct?

18 A. Well, first I think it's important to
19 recognize that the percentage difference in the
20 distributions changed -- changes were less than a
21 percentage. And so what it shows is, is that when you
22 remove those 31 for which there were no decisions made,
23 that it narrows the difference between Caucasian and
24 African American registered voters and it advantages
25 using -- in the way in which Dr. Herron writes among

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1 those African Americans had a smaller difference in
2 having a new place.

3 Q. As an aside, you referred to counties in which
4 no decisions were made. But a decision not to close a
5 polling place or not to change a polling place could
6 count as a decision. Right?

7 A. Perhaps, but then the question is, did it --
8 was even, you know -- there -- from my perspective from
9 an analysis for those counties there was -- there were
10 no changes, so in those counties the racial composition
11 isn't -- if the county boards of election were making a
12 decision based on race hypothetically, in those counties
13 there were no decisions made. And so from my -- from my
14 review of the data what this shows is again Dr. Herron
15 makes the conclusion aggregating across the counties,
16 yet there are these 31 for which there were no changes.

17 Q. But you don't know, for example, that in the
18 31 counties where no changes were made the boards didn't
19 consider closing or indeed opening additional polling
20 places. Right?

21 A. I don't know one way or another. From my
22 standpoint from looking at the data, they made no
23 changes.

24 Q. But that doesn't necessarily tell you that
25 they weren't faced with or didn't make any decisions

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1 about whether to make a change?

2 A. I don't know one way or another, but they did
3 not make a -- they did not make a change.

4 Q. Okay. If we look at section -- excuse me,
5 Paragraphs 36 and 37, you critique Dr. Herron for
6 failing to consider the influence of the shift toward
7 absentee and early voting in Paragraph 36. In your
8 Table 2 you're only comparing the absentee and early
9 voting from 2014 to 2018. Correct?

10 A. Yes, to be -- because that's the period that
11 Dr. Herron focused on in his report.

12 Q. And you didn't look to see if that rate of
13 change was different between 2014 and 2016, and 2016 and
14 2018. Correct?

15 A. I don't know if I looked at 2016, I may have,
16 or at least looked to see how easily I could pull the
17 data from EABS. However, my focus was to respond to
18 Dr. Herron's comparison of 2014 to 2018.

19 Q. And you focused on the shift to early voting
20 because of a hypothesis that the need and perhaps the
21 supply of polling places may have been lessened and that
22 might have been part of what was driving the closures of
23 polling places in 2018. Is that fair?

24 A. What I am showing is that from an economist
25 standpoint of supply and demand, the usage of early

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1 voting and no-excuse absentee ballots may influence
2 decision makers.

3 Q. But here we're focused on the decisions to
4 close polling places at some point before 2018. So
5 isn't it true that any drop or any drop in in-person
6 voting between 2016 and 2018 could not have been a basis
7 for election officials to close polling places in
8 anticipation of the 2018 election?

9 MR. BELINFANTE: Object to form.

10 A. Well, what -- what we know is that there is --
11 has been a trend in the use of absentee -- no-excuse
12 absentee ballots and in the usage of early voting.

13 BY MS. EDMONDSON:

14 Q. And for the decision-makers who are making
15 decisions about polling place locations for 2018, they
16 would have needed to rely on data from 2014 to 2016 or
17 indeed 2012 to 2014 rather than data right before --
18 from the 2018 election?

19 MR. BELINFANTE: Object to form.

20 A. I don't know what -- I don't know what
21 information they would or would not have relied upon.
22 What this does show is that there is movement; and what
23 I am familiar with in reading literature and looking at
24 statistics, there has been an upward increasing usage of
25 absentee ballots and usage of early voting.

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1 BY MS. EDMONDSON:

2 Q. And for these statistics you're looking on a
3 statewide aggregated basis. Correct?

4 A. Yes, in response to Dr. Herron.

5 Q. Did you look to see if there were geographic
6 differences in the shift or trend toward early and
7 absentee voting among different counties in Georgia?

8 A. No, this is just to say -- this isn't looking
9 at racial composition. It's looking at an overall
10 trend. When one looks at Dr. Herron's statistics on
11 election day polling places, he does not show a
12 difference by race that's adverse to African Americans.
13 And so I wanted to look to see what is the usage.

14 Q. But you didn't look specifically to see if the
15 counties that closed polling places were counties that
16 experienced a trend in the shift toward early and
17 absentee voting. Is that correct?

18 A. That is correct.

19 Q. So we can move on to Section V. In the end of
20 Paragraph 37 you state that voters "who voted early
21 and/or submitted absentee ballots would not be impacted
22 by a change in polling place because early voting places
23 and submitting an absentee ballot have no relationship
24 to the election day polling places of voter. Not clear
25 why Dr. Herron close to include these distributions by

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1 race and ethnicity in his report as they are
2 misleading."

3 So I take it it's your position that a closed
4 or moved polling place could have no effect on a voter's
5 decision to vote early or absentee?

6 A. What I am stating is for the statistic that
7 Dr. Herron is calculating regarding the racial
8 composition or distribution between those who moved and
9 did not move, in terms of those statistics what is
10 relevant are those election day ballots where they're
11 actually going to those polling places.

12 Q. So my question was just a smaller question,
13 which is, is it your position that the fact that a
14 voter's polling place has been closed or moved would
15 have no effect on a voter's decision to vote early or
16 absentee?

17 A. I don't know the rationale for why someone
18 votes with an absentee ballot or decides to vote early.
19 What I am saying is that in terms of the relevance of
20 the polling places they are on election day.

21 Q. So it doesn't seem possible to you that if a
22 voter learned that his or her polling place had been
23 closed that that voter might choose to vote early or
24 absentee rather than vote on election day?

25 A. I suppose it's possible. From Dr. Herron's

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1 information and from the data available one cannot
2 ascertain that.

3 Q. But is it at least possible the shift of some
4 groups to earlier absentee voting in 28 might be the
5 effect of the closure of polling places rather than the
6 cause of the closure of polling places?

7 A. I don't know one way or another. Individuals
8 can choose to vote early or by absentee for his or her
9 own personal reasons.

10 Q. So if we look then at your second report --

11 MS. EDMONDSON: Actually, I think if we can
12 take a short break now that would just let me
13 streamline things. I don't have very much more to
14 go, so I think it will help me streamline things,
15 if that's all right?

16 THE VIDEOGRAPHER: Okay. Off the record. The
17 time is 1:40.

18 (Recess from 1:40 p.m. to 1:51 p.m.)

19 THE VIDEOGRAPHER: We are back on the record.

20 The time is 1:51.

21 BY MS. EDMONDSON:

22 Q. Dr. Herron -- Dr. Herron -- Dr. Thornton,
23 before we broke we were discussing the effect on
24 election day voting of changes in polling place
25 locations.

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1 Your conclusion in your report was that
2 African Americans were the, quote, "least
3 'disenfranchised'" of any other racial ethnic category
4 because they had the least change in election-day
5 turnout by change in polling place. Correct?

6 A. I should have been clearer to say "among those
7 with a known race."

8 THE COURT REPORTER: I'm sorry, "a known"
9 what?

10 A. "Among those with a known race in his table,"
11 in Dr. Herron's Table 12.

12 BY MS. EDMONDSON:

13 Q. In his supplemental report Dr. Herron offered
14 a few reasons why absentee or early voting might not be
15 seen as as good a substitute for election-day voting,
16 and I don't believe you offered any reaction or critique
17 of those reasons, but I wanted to give you an
18 opportunity to do so if you have any.

19 A. I apologize. Could you ask me the question
20 again?

21 Q. Sure. In his supplemental report --

22 MS. EDMONDSON: We can mark that as an
23 exhibit. I don't believe we have yet, actually.

24 We can call that Exhibit 3, I believe?

25 THE COURT REPORTER: 4.

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1 MS. EDMONDSON: 4. Apologies.

2 (Exhibit 4 will be marked for identification
3 and attached to the transcript once received by the
4 reporter.)

5 BY MS. EDMONDSON:

6 Q. In paragraphs approximately 120 to 125
7 Dr. Herron identifies some -- takes the position that
8 not all forms of voting are equal. So I was offering
9 you an opportunity -- I don't believe you offered any
10 critique of that position in your supplemental report,
11 but I wondered if you agreed with that proposition or if
12 you had a critique of it?

13 A. I don't have an opinion one way or another.
14 My understanding is that there is now -- I read an
15 article in which Ms. Abrams was questioned by the AP and
16 she thought that absentee voting is going to be the law
17 of the land, and that she viewed it as the safest and
18 most accessible form of voting.

19 So there seems to be perhaps a disagreement on
20 the usage and the pros and cons of absentee voting in
21 Dr. Herron's opinion versus Ms. Abrams'.

22 Q. Do you recall when you read this article by
23 Ms. Abrams or quoting Ms. Abrams?

24 A. It would have been after I filed my report.
25 But there's been a lot of discussion about the usage of

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1 absentee voting, and I did not address it in my report
2 as there's been -- there's pros and cons.

3 Q. Was it after your supplemental report or after
4 your initial report?

5 A. I believe that it would have been after my --
6 after both reports.

7 Q. And do you recall what publication you read
8 this in?

9 A. It was an Associated Press question and
10 answer.

11 Q. So if it was after your second report is it
12 fair to say it was after the COVID-19 pandemic was fully
13 on the horizon?

14 A. Both of my reports were submitted after it was
15 fully on the horizon.

16 Q. Okay. So do you recall whether Ms. Abrams
17 comments about the safety of absentee voting were made
18 in the context of public health concerns concerning
19 in-person voting?

20 A. I believe as I recall the article there was
21 certainly that, but she also -- as I recall she viewed
22 it as I think, quote, "the safest and most accessible
23 way to vote." And so she was looking at it not only
24 from the standpoint of safety but also accessibility.

25 Q. Do you still have that article handy? Not

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1 necessarily right now, but to provide to your counsel
2 for production.

3 A. If I can find it on the Internet.

4 Q. Okay. Well, after this deposition we'd
5 appreciate it if we could do that so we can mark it as
6 an exhibit after the fact, if possible.

7 If you can turn to your second report. If you
8 look at Paragraph 23 you note that "In addition to the
9 general trend of increased alternative voting, in 2018,
10 African-American voters in particular used early voting
11 polling places at a higher rate."

12 And I take it from the citation that is
13 nationwide and not necessarily in Georgia, your citation
14 there?

15 A. Yes.

16 Q. But the data in your table backs up that that
17 is also true in Georgia for in-person early voting. Is
18 that accurate?

19 A. What I have available for in-person early
20 voting in Georgia is the overall usage. Table 3 allows
21 us -- one to look at the in-person early voting by race
22 and ethnicity.

23 Q. So I think perhaps can you explain then what
24 the numbers in Table 3 represent here? For example, the
25 16.2 for white alone, what does that -- what does that

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1 number mean?

2 A. So among those who voted in the 2018 election,
3 16.2 percent of Caucasians voted early in person.

4 Q. Okay. And 24 percent of Caucasians voted by
5 mail. Is that accurate?

6 A. That's correct.

7 Q. So, Dr. Thornton, if you look at these
8 numbers, while it is true that African Americans had a
9 higher percentage of early voting versus other racial
10 and ethnic groups, isn't it true that they had the
11 lowest percentage of voting by mail of any of the ethnic
12 groups listed here?

13 A. They do; and in the context of Georgia, within
14 Georgia no-excuse absentee mail-in ballots are a
15 relatively small proportion of the overall ballots cast.

16 Q. And this data that you're looking at in
17 Table 3 shows that African Americans have the lowest
18 percentage of alternative voting taking in-person and
19 mail together of any ethnic group that's included.
20 Correct?

21 A. That may be correct but as I testified, in
22 mail is a relatively small proportion of the ballots
23 cast in Georgia. They're mostly as an early ballot,
24 alternative ballots, it's in-person early voting in
25 which you have a higher proportion of African Americans

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1 in that category.

2 Q. Dr. Thornton, we've spent most of our time
3 today focusing on what I would say is the primary
4 critique you offer of Dr. Herron's analysis, which is
5 his decision to look at things on a statewide basis
6 rather than to look at the individual decisions made by
7 county officials. Would you agree that that's
8 essentially the central critique of your report?

9 A. It's one of the central critiques.

10 Q. And you've agreed that you did not provide a
11 county-by-county break down of the reasons why polling
12 places were closed or unavailable. Correct?

13 A. No, neither -- Dr. Herron did not. I raised
14 it as an issue, and he did not do such in his response
15 report.

16 Q. And you've identified a lot of reasons why
17 that would be very difficult to do. Correct? It would
18 require a lot more than a Google search to do.
19 Correct?

20 A. It would take more than a Google search.

21 Q. And is it fair to say that it would be close
22 to impossible to have a comprehensive account of why
23 polling places were closed in each county?

24 MR. BELINFANTE: Object to the form.

25 A. I don't know one way or another, but in order

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1 to assess the statistics -- in order to frame the
2 statistics that Dr. Herron has calculated, one would
3 need to know what those reasons were.

4 BY MS. EDMONDSON:

5 Q. And your reason for thinking that's important
6 is that, as you've cited, the counties have -- you cited
7 a statute to show that the counties are the
8 decision-makers when it comes to shutting down polling
9 places. Correct?

10 A. Counties make the decision regarding
11 polling -- the location and number of polling places;
12 and based on the information -- for example, in
13 Table 3 -- when you look at it county by county there is
14 great variation.

15 Q. But, Dr. Thornton, it's correct, is it not,
16 that elections in Georgia for governor, for senator, and
17 various others, what matters is not the decisions county
18 by county but the overall aggregate percentages by
19 registered voter in the state of Georgia. Correct?

20 MR. BELINFANTE: Object to the form.

21 A. If you're asking me in terms of who is elected
22 for a statewide or a election that is the total ballots
23 that count, yes. To the extent that it is alleged that
24 changes in polling places influence those outcomes, then
25 one would want to know which counties actually could

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1 potentially impact those numbers. So you have included
2 in those numbers statewide ballots cast, counties for
3 which there were no changes or no closures.

4 MS. EDMONDSON: Can we go off the record for a
5 moment?

6 MR. BELINFANTE: Okay.

7 MS. EDMONDSON: Um --

8 THE VIDEOGRAPHER: Just a moment, please.

9 MS. EDMONDSON: I'm sorry.

10 THE VIDEOGRAPHER: Off the record. The time
11 is 2:07.

12 (Recess from 2:07 p.m. to 2:10 p.m.)

13 THE VIDEOGRAPHER: We are back on the record.
14 The time is 2:10.

15 MS. EDMONDSON: Dr. Thornton, thank you very
16 much for appearing today remotely by video, and I
17 have nothing further for you.

18 THE COURT REPORTER: Any cross, Counsel?

19 MR. BELINFANTE: I have no questions.

20 Thank you.

21 THE VIDEOGRAPHER: Okay. This is the
22 videographer. We ask that all participants please
23 stay connected briefly to provide your transcript
24 and video orders, after which I'll close the
25 record.

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1 THE COURT REPORTER: Ms. Edmondson, you're
2 ordering the original, and you need it on a 3-day
3 expedited basis. Is that correct?

4 MS. EDMONDSON: If that is what you've already
5 been told, that sounds fine. I would have to
6 check, but I can check and confirm if that's not
7 the case.

8 THE COURT REPORTER: Did you need a --

9 THE VIDEOGRAPHER: And the video -- oh, sorry.
10 Go ahead.

11 THE COURT REPORTER: Did you need a copy of
12 the transcript --

13 MS. EDMONDSON: Me?

14 THE COURT REPORTER: -- defense counsel?
15 Sorry.

16 MR. BELINFANTE: Yes, please, we would like a
17 copy of the transcript.

18 THE COURT REPORTER: And is your witness going
19 to read or waive?

20 MR. BELINFANTE: She'll read, please.

21 THE VIDEOGRAPHER: Ms. Edmondson, would you
22 like a copy of the video also?

23 MS. EDMONDSON: Let me get back to you about
24 that. I'm not the decision-maker on that question.

25 THE VIDEOGRAPHER: Okay. So because it's an

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1 expedite when I turn this in I'm going to -- let me
2 go off the record.

3 We are now going off the record on May 22nd,
4 2020, at 2:11 p.m. This concludes the
5 videoconference deposition of Dr. Janet Thornton.

6 (The reading and signing of this
7 videoconference deposition is not waived, and the
8 taking of this videoconference deposition concluded
9 at 2:11 p.m.)
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VIDEOCONFERENCE DEPOSITION ERRATA SHEET

Our Assignment No. J5562519

Case Caption: Fair Fight Action, et al., v.
Raffensperger, et al.

DECLARATION UNDER PENALTY OF PERJURY

I declare under penalty of perjury that I have read the entire transcript of my Videoconference Deposition taken in the captioned matter or the same has been read to me, and the same is true and accurate, save and except for changes and/or corrections, if any, as indicated by me on the VIDEOCONFERENCE DEPOSITION ERRATA SHEET hereof, with the understanding that I offer these changes as if still under oath.

Signed on the _____ day of _____, 20____.

JANET THORNTON, Ph.D.

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CERTIFICATE OF REPORTER

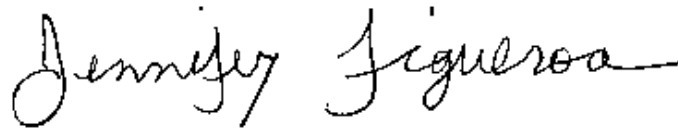
STATE OF FLORIDA

COUNTY OF HILLSBOROUGH

I, Jennifer Figueroa, Registered Professional Reporter, certify that I was authorized to and did stenographically report the foregoing videoconference deposition, Pages 1 through 88; and that the transcript is a true record of the testimony given by the witness.

I further certify that I am not a relative, employee, attorney, or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorneys or counsel connected with the action, nor am I financially interested in the action.

Dated this 28th day of May, 2020.



Jennifer Figueroa, RPR

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CERTIFICATE OF OATH

STATE OF FLORIDA

COUNTY OF HILLSBOROUGH

I, Jennifer Figueroa, Registered Professional
Reporter, Notary Public, State of Florida, certify that
JANET THORNTON, Ph.D., appeared remotely via
videoconference before me on the 22nd day of May, 2020,
and was duly sworn.

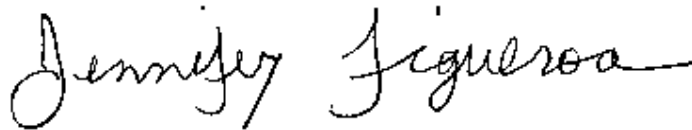
WITNESS my hand and official seal this 28th
day of May, 2020.

Identification:

Personally known ☐ or produced identification ☒.

Type of identification produced:

Florida driver's license.



Jennifer Figueroa, RPR
Notary Public, State of Florida
Commission No.: GG 071120
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9:11 10:9	
20:20	
working	
13:3	
20:19	
26:17	
works	
62:1	
write	
24:5	
writes	
72:25	
wrong	
40:13	

DEFENDANTS' EX. 1

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

FAIR FIGHT ACTION, INC., et al.,)

Plaintiffs,)

v.)

BRAD RAFFENSPERGER, in his official)
capacity as Secretary of State of the State of)
Georgia, et al.,)

Case No.1:18-cv-05391-SCJ

Defendants.

Rebuttal Report of Janet R. Thornton, Ph.D.

I, Janet R. Thornton, being first duly sworn, depose and say that:

1. I am over 21 years old, have not been declared incompetent, and make the statements contained herein based upon facts presently known to me.

2. I am a Managing Director at Berkeley Research Group (BRG), a consulting firm specializing in the application of economic, econometric, and statistical analysis for litigation, regulatory compliance, and risk assessment matters. BRG experts have analyzed data for matters involving firms in many sectors, government entities, as well as institutions of higher education and research. My fields of special interest include computer analysis of large databases, applied econometrics and statistical analysis.

3. I received doctoral and master's degrees in economics from The Florida State University, and a bachelor's degree from the University of Central Florida in economics and political science.

4. I am a member of the American Economic Association and the National Association of Forensic Economics.

05/22/20

Exhibit 1

5. Prior to my employment at BRG, I was employed at ERS Group for nearly 30 years and held the title of Managing Director. Over the past 30 years, I have prepared analyses for both plaintiffs and defendants, as well as for risk assessment. In the field of labor economics, I have performed research and analyzed data in matters involving allegations of gender, race, ethnicity, religious, and age discrimination in a variety of employment practices including selection, termination, and compensation, and have prepared analyses regarding Fair Labor Standards Act compliance. I have also studied borrower characteristics as they relate to the ability to obtain credit and their effect on the terms of credit transactions.

6. With respect to matters concerning election issues and voting rights, I have compared the racial composition of voter turnout by type of election as well as with regards to provisional ballots and out-of-precinct ballots by election. I have also examined the incidence of having voter identification and the impact of changes in the number of early voting days. Further, I have provided testimony regarding simulated maps prepared in redistricting matters.

7. I have designed legally defensible sampling/survey methodologies and served as an expert witness to critique the validity of samples prepared by others including use of margins of error, sample size, and stratification methods. I have also prepared numerous estimates of economic damages.

8. I have extensive experience working with the decennial Census data to address issues raised in credit, insurance, housing, voting/election, and employment discrimination matters. My knowledge of Census data has resulted in expert testimony regarding the strengths and weaknesses of these data. I have also been asked to assess race/ethnicity predictions using different methodologies.

9. For over 30 years, I have designed and executed programming logic to match and combine data from disparate sources (i.e., data sets). In addition, I have evaluated the accuracy and reliability of the data matching performed by other experts.

10. I have provided expert testimony in arbitration hearings and before federal and state courts and regulatory agencies.

11. I testified in the matters of *North Carolina State Conference of the NAACP, et al. v. Patrick Lloyd McCrory, in his official capacity as Governor of North Carolina, et al.* (Case No. 1:13CV658, U.S. District Court, Middle District of North Carolina); *League of Women Voters of North Carolina, et al. and Louis M. Duke, et al. v. The State of North Carolina, et al.* (Case No. 1:13CV660, U.S. District Court, Middle District of North Carolina); *United States of America v. The State of North Carolina, et al.* (Case No. 1:13CV861, U.S. District Court, Middle District of North Carolina); *Barbara H. Lee, et al. v. Virginia State Board of Elections, et al.* (Case No. 3:15-CV-357, U.S. District Court, Eastern District of Virginia); *Arizona Democratic Party, et al. v. Michele Reagan, et al.* (Case No. CV-16-01065, U.S. District Court, District of Arizona); *Holmes, et al. v. Timothy K. Moore, et al.* (Case No. 18 CVS 15292, Wake County Superior Court); **and** *North Carolina State Conference of the NAACP, et al. v. Roy Asberry Cooper, III, in his official capacity as Governor of North Carolina, et al.* (Case No. 1:18-CV-01034). **These matters involved issues related to voter turnout and/or voting precincts, among other issues.**

12. In addition, I provided testimony regarding the computer simulated maps prepared in *Ohio A. Philip Randolph Institute, et al. vs. Larry Householder, et al.* (1:18-CV-00357, U.S. District Court, Southern District of Ohio); *Common Cause, et al. vs. Representative David R. Lewis, et al.* (18 CVS 014001, Superior Court, Wake County, North Carolina); and *Rebecca Harper, et al. v Representative David R. Lewis, et al.* (19-cv-012667).

13. No court has rejected me as an expert qualified to testify in my fields.

14. I have been an adjunct professor of quantitative methods and statistics at The Florida State University and am a presenter at seminars on the topics of statistical techniques, data and modeling, compensation analysis, and calculating damages. I have published articles in the *Journal of Legal Economics* and the *Journal of Forensic Economics*, and co-authored a chapter in the anthology *Developments in Litigation Economics*, which discusses equal business opportunity programs, among other topics.

15. I have been retained by Counsel for the State of Georgia to provide expert testimony in the above captioned matter. I manage a team of professionals who have assisted me with this matter and worked under my direction and supervision. All work was vetted and verified by me and my team. My time is billed at the rate of \$560 per hour for this matter. My updated curriculum vitae and list of testimony in the past four years are contained in Appendix A.

16. Appendix B lists the materials that I relied upon in preparation of this report. I also relied upon information from public sources as referenced throughout this report.¹

¹ If additional information is obtained that is relevant to this report, it may need to be modified or supplemented.

I. Findings

17. Counsel for the State of Georgia in the above captioned matter asked BRG to review the report of Plaintiffs' Expert, Dr. Herron,² to determine if his assertions regarding the "closures" and movement of polling places adversely impacted African-American voters.

18. It is my understanding that the Complaint in this matter alleges that in 2015, the Secretary of State encouraged the consolidation of precincts and closure of polling places. The Complaint further states that Georgia has "consolidated and moved precincts and closed polling places in areas with high proportions of voters of color."³

19. My key findings are as follows and are described more fully in the subsequent sections:

- Generally, Dr. Herron reported his findings across all Georgia counties thereby ignoring the individual decision-making of each county to determine the location of each polling place as dictated by Georgia Statute § 21-2-265.
- Dr. Herron fails to distinguish between polling place changes and closures that occurred between 2014 and 2016 as compared to 2018. Presumably, if a voter's polling place changed prior to the 2016 election and the individual voted in 2016 then, the voter would have known where to vote in 2018. This presumed knowledge is not addressed or considered by Dr. Herron.
- Voter turnout in Georgia increased from 50.03% during the November 2014 mid-term election to 61.44% during the November 2018 mid-term election, even with the polling place changes and closures.
- With respect to the percentage of registered voters with a closed polling place, Dr. Herron's reported outcomes are impacted by closures in particular counties. He has failed to provide real-world information regarding the closures that could occur because the site was torn down or the site no longer wished to serve as a polling place. He simply ignores information regarding the operability of locations. For example, a nursing home may wish to protect its residents from being exposed to viruses and, therefore, may no longer wish to serve as a polling place.
- A review of some of the "closures" identified by Dr. Herron shows that the facilities were not simply closed as polling places through the control of the county. Instead the facilities themselves were moved or torn down and, consequently, the county was required to move the polling place.

² Expert Report of Michael C. Herron, dated February 18, 2020 (hereafter, "Herron Report").

³ Complaint, pages 42-43.

- Dr. Herron fails to consider shifts in the manner that Georgia voters cast their ballots between 2014 and 2018. Georgia voters increased their usage of absentee ballots and early voting in 2018 and reduced their usage of election day voting. With a decline in the demand for election day voting, the need and thus the supply of polling places presumably lessened.
- In general, African-Americans are shown to move geographically at a higher rate than Caucasians. Consequently, Dr. Herron's overall statistics that include movers are misleading.
- Dr. Herron compared the closure rate of polling places that he defined as being majority African-American to non-majority African-American polling places. However, when examined by county, more counties have majority African-American polling places with a *lower* closure rate than the non-majority African-American polling places.
- When assessing polling place changes among voters without a change in address by county, there were 31 counties without any changes between 2014 and 2018. When these 31 counties are removed from Dr. Herron's reported statistics, his conclusions change.
- Dr. Herron's report shows that with regard to voting on election day, African-American registered voters were "disenfranchised" *the least* during the 2018 election by changes in the polling place.

20. To arrive at these conclusions, I relied upon the programming logic that Dr. Herron produced on March 4, 2020. His code was modified in order to generate his summary results by county as reported below.

II. Dr. Herron's Primary Reliance on Statewide Statistics Ignores the Decision-Making of Counties

21. Dr. Herron relies primarily on statewide statistics regarding polling place closure differences between African-American and Caucasian registered voters. He testified that the main questions that he addressed in his report "do not depend at all on county borders."⁴ Under Georgia Statute § 21-2-265, it is the responsibility of the county or municipality to determine the polling place within each precinct. It is at the county superintendent's discretion to make changes to polling places to, for example, place a polling place outside of a precinct to better serve the needs

⁴ Deposition of Michael C. Herron, dated February 26, 2020 (hereafter, "Herron Deposition"), page 120, line 24 to page 121, line 1.

of voters. The statute places time restrictions regarding changes to precincts; for example, the placement of a polling place outside of the precinct is not allowed within 90 days of a primary or election.⁵ As a consequence, providing statistics in aggregate across the State of Georgia, as Dr. Herron does, is contrary to the statute that dictates that it is the county and not the state that makes decisions regarding the closure and placement of polling places.

22. While Dr. Herron depicts variation from county to county, he does not provide by county the equivalent of his overall state statistics that form the basis of his conclusions. This is evident when the same overall statistics reported by Dr. Herron are prepared by county. Between 2014 and 2018, 70% of the counties did *not* have a reduction in the number of polling places. Further, between 2014 and 2018, 36% of the counties did *not* close polling places. As a consequence, Dr. Herron has mis-leadingly masked these county differences through his use of state-wide statistics.⁶

23. Dr. Herron fails to provide information for the polling location closures⁷ that could have occurred for numerous reasons, some of which are not under the control of the county Boards of Elections. While Dr. Herron testified that he does not take a position on the political intent of any of the polling place location changes,⁸ he does not consider any factor other than race/ethnicity. However, in reality, a polling place may be closed because the facility no longer wishes to serve as a polling place (a nursing home may wish to protect its residents from being exposed to viruses) and some polling places are physically closed or torn down and, therefore, are

⁵ § 21-2-265 (a) and (g). The current statute, effective April 2, 2019, added subsection (f) placing limits on the number of days that a polling place could change prior to an election.

⁶ See Georgia Statute § 21-2-265 regarding the role of county government in establishing polling locations in Georgia.

⁷ A closure, according to Dr. Herron, includes polling locations that have moved and are not truly closed. Dr. Herron states that he identified closed polling places in Georgia by “assessing the extent to which the physical addresses of polling places used in the 2014 General Election were also used in the 2018 General Election.” [Herron Report, page 27.]

⁸ Herron Deposition, page 62, lines 1-13.

no longer available to serve as a polling place. Dr. Herron fails to address the fact of reality for these types of closures and has inflated his statistics regarding closure rates due to this failure.

24. The following are examples of polling places that existed in 2014 but were torn down or closed and, thus, not available to serve as polling sites. The first location, Meadowview Elementary in DeKalb County, served as a polling place and was torn down after closing in 2017. This elementary school was located in a census block group that is over 94% African-American among the citizen voting age population (CVAP).⁹ A second location, Meadows Operations Center in Fulton County, also served as a polling place and was permanently closed and is slated for demolition. This location is in a census block group that is 100% African-American among the CVAP.¹⁰ A third example, Atlanta Job Corps Center in Fulton County, was also permanently closed. It was located in a census block group that is over 88% African-American among the CVAP.¹¹

⁹ Meadowview Elementary School (Lat/Lon 33.699835, -84.313338). The school closed in 2017, see: <https://www.publicschoolreview.com/meadowview-elementary-school-profile/30316>

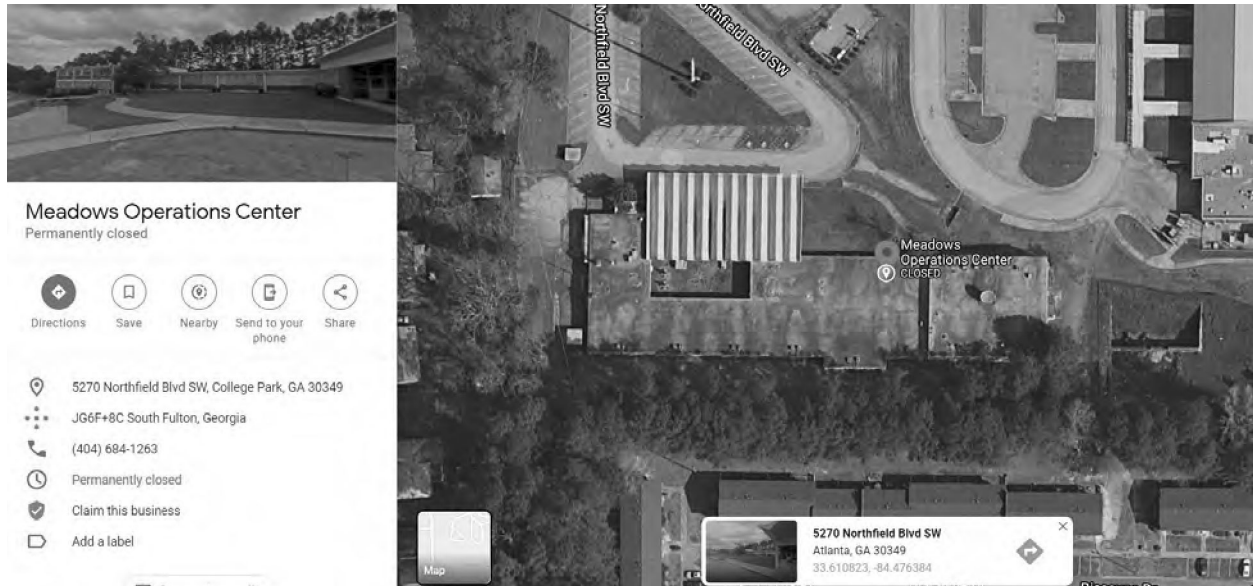
¹⁰ Meadows Operations Center (Lat/Lon 33.610823, -84.476384). The center had been closed for a long time and was slated for demolition in 2019, see: <https://www.fox5atlanta.com/news/fulton-county-schools-votes-to-demolish-meadows-operation-center>

¹¹ Atlanta Job Corps Center (Lat/Lon 33.760760, -84.442089). The center was closed in 2017 due to a new location being constructed, see: https://www.mdjonline.com/neighbor_newspapers/south_metro/business/atlanta-job-corps-center-coming-to-south-fulton/article_7612d2a0-e2f5-11e8-bb75-cffb05382543.html

**Figure 1—Meadowview Elementary School
1879 Wee Kirk Road in Atlanta Georgia (30316)
DeKalb County**



**Figure 2—Meadows Operations Center
5270 Northfield Boulevard, Atlanta, Georgia (30349)
Fulton County**



**Figure 3—Atlanta Job Corps Center
239 West Lake Avenue NW Atlanta, Georgia (30314)
Fulton County**



26. Dr. Herron's analyses do not consider the decisions of the facilities serving as polling places, the availability of these locations, or the decisions of the counties regarding the

selection of polling places. As an illustration, at Table 2 of his report,¹² Dr. Herron provided closure rates in racially homogeneous block groups which he defines as 100% African-American or Caucasian down through 95% African-American or Caucasian, even though, as Dr. Herron testified, most registered voters in Georgia “do not live in racially homogeneous census block groups.”¹³ For block groups that are either 95% African-American or Caucasian, Dr. Herron shows a lower African-American closure rate. It is only those block groups that are above 95% homogenous for which he reports differences between the African-American and Caucasian closure rates that range between 0.95 and 2.76 percentage points, depending on the percentage homogenous. However, as the examples above illustrate, there are numerous reasons for closures that are independent of race/ethnicity and that are not accounted for by Dr. Herron.

III. Dr. Herron’s Assessments of the Percentage of Registered Voters with Closures is Influenced by Misleading Comparisons

27. Dr. Herron attempted to determine whether the polling places of voters in the 2014 voter registration file were closed in 2018. He did not determine if the closure occurred before the 2016 election or before the 2018 election. Given that the voter participation for the 2016 presidential election was higher than the 2018 mid-term election, it is likely that voters whose polling place changed prior to the 2016 election and who then voted in 2016 would have known of their new polling place at least two years prior to the 2018 election.¹⁴ This is not addressed by Dr. Herron. According to the Georgia Secretary of State website, the voter turnout increased from 50.03% for the November 2014 general election to 76.53% for the November 2016 presidential

¹² Herron Report, page 50.

¹³ Herron Deposition, page 102 lines 16-19.

¹⁴ Dr. Herron testified that, conceivably, the change could have occurred before the 2016 election or after the 2016 election. [Herron Deposition, page 71, lines 14-18.]

election. Also, despite the closures that Dr. Herron counts, voter turnout in Georgia *increased* from 50.03% in November 2014 to 61.44% for the November 2018 general election.¹⁵

28. By not considering the reasons for closures as well as the increase in the voter turnout, Dr. Herron's examination of polling place closures is incomplete and misleading. Dr. Herron prepares two types of comparisons with regard to polling place closures. First, at Table 3,¹⁶ he reports the differences in the percentage of registered voters with a closed polling place by race/ethnicity while at Tables 4 through 6,¹⁷ he counts the number of polling places that closed, distinguishing polling places that he labelled majority African-American based on different thresholds of the percentage African-American among the registered voters associated with each polling place.

29. At Table 3, Dr. Herron presents how many of the 2014 registered voters had their polling place closed¹⁸ as of 2018. He then determines that, among these registered voters, 16.68% of Caucasian and 16.80% of African-American registered voters had closed polling places, a difference of 0.12 percentage points. However, in addition to not considering the reason for the closures as described above, this comparison included registered voters who moved and consequently, their polling place would have potentially changed regardless of a closure in their 2014 polling place. According to the Bureau of Census, for the period 2013 to 2017, while 6.5% of Caucasians moved within a county of Georgia, 9.9% of African-Americans moved within a county of Georgia, a 3.4 percentage point difference.¹⁹ This difference in the rate of movement

¹⁵ <https://results.enr.clarityelections.com/GA/54042/149045/en/summary.html> for 2014; <https://results.enr.clarityelections.com/GA/63991/184321/en/summary.html> for 2016; <https://results.enr.clarityelections.com/GA/91639/Web02-state.221451/#/> for 2018.

¹⁶ Herron Report, page 53.

¹⁷ Herron Report, page 54-56.

¹⁸ Assuming Dr. Herron's definition of a closed polling place.

¹⁹ U.S. Bureau of Census, American FactFinder, American Community Survey estimates for 2013-2017: https://factfinder.census.gov/bkmk/table/1.0/en/ACS/17_5YR/S0701/0400000US13.

between African-Americans and Caucasians more than offsets the 0.12 percentage point difference that Dr. Herron reports in Table 3.

30. In addition, there is substantial variation among the 159 Georgia counties in the rate of closure/movement of precincts.²⁰ Among the 101 counties with at least one closure, 54 (or 53.5%) had a higher proportion of Caucasian registered voters with a closure compared to the proportion of African-American registered voters. Moreover, the high variability can be illustrated by removing one relatively small county. If Bibb County is removed, the percentage of African-American registered voters in 2014 with a closure as of 2018 is reduced to 15.63% and the percentage of Caucasian registered voters increases to 16.36%, yielding an African-American-Caucasian difference of -0.74 percentage points rather than the +0.12 percentage points that Dr. Herron calculates. Thus, by removing one small county from his calculations, Dr. Herron's conclusion is reversed.

31. At Tables 4 through 6 of his report, Dr. Herron counts the number of closed polling places between 2014 and 2018. He distinguishes each polling place as being an African-American majority or not, by using the percentage African-American among the registered voters associated with the polling place. At Tables 4 and 5, he applies a 50% threshold to classify African-American polling places and at Table 6, he applies a 60% threshold.

32. Tables 4 through 6 are statewide counts and percentages that do not adjust for the variation that exists by county. Among the 101 counties with a closure between 2014 and 2018, there were 58 with at least one majority African-American polling place using the 50% threshold as measured by Dr. Herron in Tables 4 and 5. Among the 58 polling places, there were 31 (53.5%)

²⁰ Again, using Dr. Herron's definition of a closure which includes movement of precincts due to building demolitions, etc.

in which the closure rate was higher for the polling places Dr. Herron deemed were *not* majority African-American.

IV. Dr. Herron's Analysis of Non-Mover Polling Place Changes is Substantially Different by County

33. Dr. Herron also examined the extent to which registered voters had a change in their polling place. A change in the polling place could have occurred not only from a reduction in the number of polling places, but also from a county deciding to increase the number of polling places.²¹ Dr. Herron testified that he does not engage in the rationale for a change in a polling place as he stated that he compares the racial composition of those with a change in polling place and does not “offer any opinion as to why.”²² At Table 7,²³ Dr. Herron provides the racial/ethnic distribution of the registered voters present in both 2014 and 2018. This table reports that 30.43% of these registered voters are African-American. He then reports the same for the subset of these registered voters who did not move between 2014 and 2018 at Table 8.²⁴ Consistent with the higher geographic mobility among African-Americans, the percentage African-American is 28.36% among the subset.

34. Dr. Herron then compares the racial/ethnic distribution of registered voters who did not move between 2014 and 2018 distinguishing between the registered voters who had a new polling place and those who did not between 2014 and 2018. Table 9 shows relatively small differences by race.²⁵ Specifically, Dr. Herron reports that a higher proportion of Caucasian

²¹Herron Deposition, page 79, lines 17-21.

²²Herron Deposition, page 79, line 22 to page 80, line 16.

²³ Herron Report, page 58.

²⁴ Herron Report, page 59.

²⁵ Herron Report, page 61.

registered voters (+0.89 percentage points) relative to African-American registered voters (-0.62 percentage points) did not change polling places.

35. However, among the 159 counties, 31 did not have any changes to their polling places between 2014 and 2018. When limited to the counties with changes in polling places between 2014 and 2018, the conclusions drawn by Dr. Herron change. As shown below, the difference in the distribution shows a higher proportion Caucasian compared to the proportion African-American among those with a new polling place relative to those without a change in polling place. The Caucasian difference between the two distributions is -0.13 percentage points compared to the African-American difference of +0.03 percentage points. This outcome is contrary to the finding reported by Dr. Herron.

Table 1—Distribution Difference of Dr. Herron’s Table 9 when Counties Without Polling Place Changes are Removed

Race/Ethnicity	New Place	Not New Place	Percentage Point Difference
Caucasian	59.37%	59.24%	-0.13
African-American	28.85%	28.87%	0.03
Unknown	7.61%	7.11%	-0.50
Hispanic	1.80%	1.93%	0.13
Asian/Pacific Islander	1.32%	1.73%	0.40
Other	1.00%	1.06%	0.06
American Indian/Alaskan	0.05%	0.07%	0.01
Total	100.00%	100.00%	

36. Dr. Herron also does not consider the changes in the volume of ballots cast through early voting and absentee (mail-in) ballots. The Election Administration and Voting Survey, conducted by the U.S. Election Commission, collects information from states regarding their voter registration and election statistics.²⁶ I examined the way Georgia voted during the 2014 and 2018

²⁶ See, <https://www.eac.gov/research-and-data/datasets-codebooks-and-surveys>.

general elections by type of ballot cast. As shown in the table below, Georgia registered voters increased their usage of absentee ballots (mail) and early voting and reduced their usage of election day ballots between 2014 and 2018. Dr. Herron fails to consider the influence of this shift on the decisions made by counties to move or close election day polling places.

Table 2—Type of Voter Participation by Election in Georgia

General Election Year	Election Day	UOCAVA	Mail	Provisional Ballot	Early Voting
2014	62.90%	0.05%	4.10%	0.27%	32.68%
2018	46.07%	0.14%	5.58%	0.30%	47.91%
Source: U.S. Election Assistance Commission Data (EAC), 2014 and 2018 elections: https://www.eac.gov/research-and-data/datasets-codebooks-and-surveys .					

V. Dr. Herron's Analysis of Election Day Turnout *Favors* African-American Registered Voters

37. Dr. Herron also examines the election turnout in 2018 among the registered voters who did not move between 2014 and 2018. At his Tables 10 through 13, Dr. Herron examines the 2018 voter turnout among the registered voters who did not move between 2014 and 2018. His Tables 10 and 11²⁷ are curious because they appear to include those who voted early and/or submitted absentee ballots. These voters would not be impacted by a change in polling place because early voting places and submitting an absentee ballot have no relationship to the election day polling place of a voter. It is not clear why Dr. Herron chose to include these distributions by race/ethnicity in his report as they are misleading.

38. Table 12,²⁸ on the other hand, limits the distribution to turnout among election day voters where the polling place would be relevant. This table is contrary to Tables 10 and 11. At Table 12, the difference in the distribution between the percentage African-American among

²⁷ Herron Report, page 69 and 71.

²⁸ Herron Report, page 73.

changed and unchanged polling places is less than it is for any other racial/ethnic category. The percentage Caucasian among those voters with a new polling place on election day is 26.57% compared to 31.22% among voters without a change in polling place, a difference of -4.65 percentage points. The percentage African-American among those voters with a new polling place on election day is 21.45% compared to 24.28% among voters without a polling place change, a difference of -2.83 percentage points.

39. Similarly, at Table 13,²⁹ Dr. Herron further restricted the voters to those who also voted in 2014. Again, the difference in the distribution between the percentage African-American among those with and without a change in polling places is less than it is for any other racial/ethnic category. The percentage Caucasian among those voters with a new polling place on election day is 31.33% compared to 37.61% among voters without a polling place change, a difference of -6.27 percentage points. The percentage African-American among those voters with a new polling place on election day is 26.57% compared to 30.35% among voters without a polling place change, a difference of -3.77 percentage points. Consequently, the difference in the distribution percentage reported by Dr. Herron at both Tables 12 and 13 is *smaller* for African-Americans compared to Caucasians and any other racial/ethnic group category.

VI. Conclusions

40. Generally, Dr. Herron reported his findings across all Georgia counties thereby ignoring the individual decision-making of each county to determine the location of each polling place as dictated by Georgia Statute § 21-2-265. In addition, he fails to take into account the shift in the manner in which Georgia voters cast their ballots in 2018 relative to 2014, thereby

²⁹ Herron Report, page 74.

potentially influencing the location and number of polling places as determined by each county. Georgia voters increased their usage of absentee ballots and early voting in 2018 and reduced their usage of election day voting. Additionally, Dr. Herron fails to take into account the real-world reasons for polling place closures or moves that are not under the control of the county, reasons such as torn down sites or facilities that no longer wished to serve as a polling place.

41. Further, in general, African-Americans are shown to move geographically at a higher rate than Caucasians. As a consequence, Dr. Herron's overall statistics that include movers are misleading. Additionally, when Dr. Herron's closure statistics are examined by county, more counties have majority African-American polling places with a *lower* closure rate than the non-majority African-American polling places.

42. Dr. Herron's examination of the distribution by race/ethnicity among those with a new polling place and those without a change in polling place between 2014 and 2018 are influenced by 31 counties without any changes in polling places between 2014 and 2018. When these 31 counties are removed, Dr. Herron's conclusions change. The difference in the distribution for African-Americans is *smaller* than that which is calculated for Caucasians, a reversal of Dr. Herron's finding.

43. Finally, Dr. Herron's report shows that with regards to voting on election day, African-American registered voters were "disenfranchised" *the least* during the 2018 election by changes in the polling place.

I have read the foregoing statement consisting of 43 paragraphs and swear that it is true and accurate to the best of my knowledge and belief.

Janet R. Thornton

Janet R. Thornton, Ph.D.

Subscribed and sworn to before me
this 24TH day of March, 2020.

Diana R. Bryson



Appendix A

Curriculum Vitae and Testimony List

Curriculum Vitae



Janet R. Thornton, Ph.D.
BERKELEY RESEARCH GROUP, LLC
2457 Care Drive, Suite A-200, Tallahassee, FL 32308

Direct: 850-402-5105
jthornton@thinkbrg.com

EDUCATION

Ph.D., Florida State University, Economics, 1992.
M.S., Florida State University, Economics, 1985.
B.A., University of Central Florida, Economics and Political Science, 1981

ACADEMIC EXPERIENCE

FLORIDA STATE UNIVERSITY

Instructor, Quantitative Methods for Business Decisions (2010)
Instructor, Quantitative Methods and Statistics (2000-2001)
Instructor, Economics (1984-1985)
Instructor and Teaching Assistant, Economics (1982-1984)

GEORGIA SOUTHWESTERN COLLEGE

Part-time Instructor (1985-1986)

UNIVERSITY OF CENTRAL FLORIDA

Research Assistant (1981)

PRESENT EMPLOYMENT

Managing Director, Berkeley Research Group, LLC (2015)

Dr. Thornton specializes in analyzing employment, insurance, and credit decisions. She has testified as an expert witness in federal court, state court, and administrative hearings regarding allegations of discrimination and the calculation of economic damages, and has been retained by both plaintiffs and defendants.

Dr. Thornton has prepared economic and statistical analyses involving allegations of gender, race, ethnicity, religious, and age discrimination in a variety of employment practices including selection, termination, and compensation. She has prepared analyses for employers both proactively and in response to litigation and OFCCP audits.

Dr. Thornton estimates economic damages and provides analysis of wage and hour claims as they relate to overtime (including misclassification), calculation of the regular rate of pay, and off-the-clock work issues including donning and doffing time. She has provided expert



witness testimony in wage and hour matters including a class action involving a large restaurant/retail chain.

Dr. Thornton has provided expert witness testimony regarding simple and complex random sampling designs, has analyzed survey data, and has calculated and incorporated statistical error rates associated with sampling designs. This expertise and her knowledge of complex databases has been used to help organize, manage, and process data for litigation including the use of sampling to identify anomalies in the organizations data processes.

Dr. Thornton's expertise in the analysis of lending practices has led her to design monitoring software specifically tailored to meet her clients' needs. She has prepared several reports and testified in class action lawsuits related to credit pricing issues.

Dr. Thornton has provided expert witness testimony regarding voting rights issues including the analysis of voter ID match rates and voting patterns among demographic groups.

PREVIOUS POSITIONS

Managing Director, ERS Group (2011 – 2015)
Director, ERS Group (2004-2011)
Vice President and Senior Research Economist, ERS Group (1998-2004)
Senior Research Economist, ERS Group (1997-1998)
Research Economist, ERS Group (1986-1997)
Research Assistant, ERS Group (Summer 1985)
Research Assistant, ERS Group (Summer 1984)

HONORS AND AWARDS

Omicron Delta Epsilon (Economics)
Omicron Delta Kappa (National Leadership)
Pi Sigma Alpha (Political Science)
Phi Kappa Phi Honor Society
Scholarship to attend the Conference on Public Choice at the Center for Public Choice in Blacksburg, Virginia, 1983

SPECIALIZATION

Labor and Natural Resource Economics



PUBLICATIONS AND PRESENTATIONS

ARTICLES

"A Labor Economist's View of the Pay Gap: Approaches for Identifying Firm-Specific Wage Disparities and Enhancing Diversity in Light of Fair Pay Laws." Prepared for the American Employment Law Council's Twenty-Third Annual Conference, October 2015.

"New Tools for the Calculation of Infringement Damages," (with Roy Weinstein and Paul White). Prepared for The Center of American and International Law, Plano, TX, October 2010.

"Weathering the Economic Downturn: Economic and Statistical Analysis for Layoffs," (with Fredrick Holt), EEO Insight, Vol. 1, Issue 3, 2009.

"Recent Developments in the Analysis of Employment Practices," (with Joan Haworth and Paul White), Developments in Litigation Economics, Eds. Patrick Gaughan and Robert Thornton. Vol. 87 of Contemporary Studies in Economic and Financial Analysis. Amsterdam: Elsevier, 2005.

"Minority and Female Owned Business Opportunity in Atlanta," (with Joan G. Haworth). Prepared for the City of Atlanta, October 2000.

"Cohort Analysis and the Determination of Economic Damages Resulting from Employment Discrimination," (with Michael J. Piette). Journal of Forensic Economics, Vol. VIII, No. 1, Winter 1995.

"Using New Labor Force Participation Rates When Computing Economic Damage and Loss: A Methodological Note," (with Michael J. Piette). Journal of Legal Economics, Vol. 4, No. 2, Summer 1994.

"A Human Capital Approach to School Retention," Ph.D. Dissertation, Department of Economics, Florida State University, April 1992.

"The Use of Cohort Analysis in the Litigation Context," (with Michael J. Piette). Presented at the American Economic Association Meeting, New Orleans, LA, January 1992.

"Changes in Labor Force Participation Rates Over Time: Some New Evidence from Census Data," (with Michael J. Piette). Presented at the Southern Economic Association Meeting, Washington, D.C., November 1992.

PRESENTATION AND TRAINING ENGAGEMENTS

"Equal Pay for Comparable Work: How to Make It Work in Massachusetts" (with Ellen Kearns), a webinar for Constangy, Brooks, Smith & Prophete, LLP, April 2018.

"Pay Equity" (panel with Lori Bowman, Zev J. Eigen, Ph.D., Genie Harrison and Susannah Howard), presented at the Daily Journal Employment Law Forum, July 2017.



"Deep Diving Pay Equity" (panel with Hon. Charlotte A. Burrows, Adam T. Klein and Nancy E. Rafuse), presented at the American Bar Association National Conference on Equal Employment Opportunity Law, March 2016.

"From the Labor Economists' Perspective – Class Certification Statistical Modeling Post-Walmart and How the Employer May Improve its Chances of Prevailing in Discrimination Cases," presented with Mary Baker, Ph.D. at the American Employment Law Council's Twenty-Third Annual Conference, October 2015.

"Economic and Statistical Analyses of Common Employment Issues" (with Bo Shippen, Ph.D.), presented at Fisher & Phillips, November 2014.

"Shoot First, Ask Questions Later: Managing through the EEOC's Strategic Priorities" (with Shay Hable and Nancy Rafuse), presented at the Corporate Counsel Institute Program, December 2013.

"How to Prepare for an OFCCP Compensation Audit" (with Steve Greene), a webinar for World at Work, September 2013.

"Compensation Analysis for Federal Contractors/Sub-Contractors," presented at the Jacksonville, Florida, Industry Liaison Group Conference, July 2012.

"WHO SAID LIFE WAS FAIR: Successfully Analyzing and Defending Fair Lending Claims" (with Eric Taylor), presented at the American Conference Institute's 13th National Forum on Consumer Finance Class Actions & Litigation, January 2012.

"Compensation Analyses," presented at the Space Coast Florida Industry Liaison Group Conference, October 2011.

"Compensation Analyses and Pay Equity," presented at the Central/Space Coast Florida Industry Liaison Group Conference, March 2010.

"Basic Statistics and Applications in AA Plan Development, Adverse Impact and Compensation," a course for the American Association for Affirmative Action's PDTI training 2010, February 2010.

"Demystifying Compensation Analysis: Concepts & Challenges, Part II," a webinar for the American Association for Affirmative Action's PDTI 2009 Webinar Series, September 2009.

"Tools for Analyzing and Monitoring Compensation," presented at the Jacksonville Industry Liaison Group Conference, May 2009.

"Tools for Analyzing and Monitoring Compensation," presented at the Central/Space Coast Florida Industry Liaison Group Conference, April 2009.

"Demystifying Compensation Analysis: Concepts & Challenges," a webinar for the American Association for Affirmative Action's PDTI 2009 Webinar Series, March 2009.

"Weathering the Economic Downturn: Economic and Statistical Analysis for Layoffs," presented at the Jacksonville Industry Liaison Group Conference, "Preparing for Change: Hot Topics for 2009 and Beyond," February 2009.



"Tools for Analyzing and Monitoring Compensation," presented at the Southwest and Rocky Mountain Regional Industry Liaison Group Conference, "Fairness and Inclusion in a Changing Workforce," November 2008.

Presented at the Proskauer Rose LLP seminar "Navigating Wage and Hour Issues in California," April 2008.

SEMINAR PRESENTATIONS

"Employment Discrimination: Economic and Statistical Evidence," an ERS Group seminar. Presented the following topics: "Commonly Used Statistical Techniques" and/or "Advanced Statistical Techniques: Compensation Analysis" and/or "Statistical Concepts: Modeling & Data Issues" and/or "Exposure and Liability: Calculating Damages." Orlando, 2012 and 2014; Washington, D.C. and New York, 2009; Washington, D.C. and New York, 2006; Washington, D.C. and New York, 2004; Washington, D.C. and New York, 2003; Chicago and New York, 2002; Dallas, 2001; New York and Los Angeles, 2000; Atlanta, Chicago, San Francisco, 1999; and Los Angeles, 1998.

"2010 Compensation Tune-up: Are Your Pay Practices Ready for Challenges?" an ERS Group webinar, January 2010.

"Weathering the Economic Downturn: Economic and Statistical Analysis for Layoffs," an ERS Group webinar, January 2009 and December 2008.

"Compensation Tune-Up for 2007: Tools for Analyzing and Monitoring Compensation," an ERS Group webinar, February 2007.

"Analyzing and Monitoring Compensation in Today's Regulatory Environment," an ERS Group seminar, Washington, D.C. and San Francisco, 2005.

PROFESSIONAL ASSOCIATIONS AND MEMBERSHIPS

American Economic Association
National Association of Forensic Economics
North Florida Committee on Foreign Relations

Expert Testimony
Within the Last Four Years



Janet R. Thornton, Ph.D.

BERKELEY RESEARCH GROUP, LLC
2457 Care Drive, Suite A-200, Tallahassee, FL 32308

Johnny Reynolds, et al. v. Alabama Department of Transportation, et al.; Case No. CV-85-T-665-N, U.S. District Court, Middle District of Alabama, Northern Division. [affidavits, depositions]

Roxie Sibley, et al. v. Sprint Nextel Corporation and Sprint/United Management Company; Case No. 02:08-CV-02063-KHV/JPO, U.S. District Court, District of Kansas. [affidavits, deposition]

North Carolina State Conference of the NAACP, et al. v. Patrick Lloyd McCrory, in his official capacity as Governor of North Carolina, et al. (Case No. 1:13CV658); League of Women Voters of North Carolina, et al. and Louis M. Duke, et al. v. The State of North Carolina, et al. (Case No. 1:13CV660); and United States of America v. The State of North Carolina, et al. (Case No. 1:13CV861), U.S. District Court, Middle District of North Carolina. [declarations, depositions, trial testimony]

Charles M. Bingham v. Raytheon Technical Services Co., LLC; Case No. 1:13-CV-00211-TWP-DKL, U.S. District Court, Southern District of Indiana, Indianapolis Division. [declaration]

Alberta Currie, et al. v. The State of North Carolina and the North Carolina State Board of Elections; Case No. 13-CVS-1419, State of North Carolina General Court of Justice, Superior Court Division, County of Orange. [affidavit]

Barbara H. Lee, et al. v. Virginia State Board of Elections, et al.; Case No. 3:15-CV-357, U.S. District Court, Eastern District of Virginia. [deposition, declaration, trial testimony]

Sheree Steele and Momina Ansoralli, et al. v. CVS Pharmacy, Inc.; Case No. 15-CV-04261, U.S. District Court, Southern District of New York. [deposition]

United States of America v. South Dakota Department of Social Services; Case No. 5:15-cv-05079-JLV, U.S. District Court, District of South Dakota, Western Division. [deposition]

Arizona Democratic Party, et al. v. Michele Reagan, et al.; Case No. CV-16-01065-PHX-DLR, U.S. District Court, District of Arizona. [deposition, trial testimony]

Stacy Tebo v. City of DeBary, Florida, and Leo Daniel Parrott; Case No. 6:16-cv-01599-31-DAB, U.S. District Court, Middle District of Florida, Orlando Division. [deposition]

Betsy Ackerson v. The Rector and Visitors of the University of Virginia; Case No. 3:17-cv-00011-GEC, U.S. District Court, Western District of Virginia, Charlottesville Division. [deposition]

Cherie Noelle Maness v. City of High Point, North Carolina; Case No. 1:17-cv-384, U.S. District Court, Middle District of North Carolina. [deposition]

Nial Benton and Hutton Graham, et al. v. Deli Management, Inc. d/b/a Jason's Deli; Case No. 1:17-cv-00296-WSD, U.S. District Court, Northern District of Georgia, Atlanta Division. [deposition]

Ohio A. Philip Randolph Institute, et al. v. Ryan Smith, Speaker of the Ohio House of Representatives, et al.; Case No. 1:18-cv-00357-TSB-KNM-MHW, U.S. District Court, Southern District of Ohio. [deposition, trial testimony]

Common Cause, et al. v. Representative David R. Lewis, et al.; Case No. 18-CVS-014001, North Carolina General Court of Justice, Superior Court Division, County of Wake. [affidavits, deposition, trial testimony]

Jabari Holmes, et al. v. Timothy K. Moore, Speaker of the North Carolina House of Representatives, et al.; Case No. 18-CVS-15292, State of North Carolina General Court of Justice, Superior Court Division, County of Wake. [affidavit, deposition]

Rebecca Harper, et al. v. David Lewis, Senior Chairman of the House Select Committee on Redistricting, et al.; Case No. 19-CV-012667, North Carolina General Court of Justice, Superior Court Division, County of Wake. [affidavit]

Equal Employment Opportunity Commission v. R&L Carriers, Inc. and R&L Carriers Shared Services, LLC; Case No. 1:17-cv-00515-DRC, U.S. District Court, Southern District of Ohio, Western Division at Cincinnati. [deposition]

Appendix B

Materials Relied Upon

Materials Relied On

- Amended Complaint for Declaratory and Injunctive Relief, dated February 19, 2019
- Expert Report of Michael C. Herron, Ph.D., dated February 18, 2020, and supporting materials
- Additional materials in support of his February 18, 2020 report provided on March 4, 2020
- Deposition of Michael C. Herron, Ph.D., dated February 26, 2020
- Statute regarding selection of polling places (Ga. Code Ann., § 21-2-265)
- Publicly available data as referenced in the report.

DEFENDANTS' EX. 2

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION

FAIR FIGHT ACTION, INC., et al.,)

Plaintiffs,)

v.)

BRAD RAFFENSPERGER, in his official)
capacity as Secretary of State of the State of)
Georgia, et al.,)

Defendants.

Case No.1:18-cv-05391-SCJ

Second Rebuttal Report of Janet R. Thornton, Ph.D.

I, Janet R. Thornton, being first duly sworn, depose and say that:

1. I am over 21 years old, have not been declared incompetent, and make the statements contained herein based upon facts presently known to me.

2. Counsel for the State of Georgia in the above captioned matter asked BRG to review the Supplemental Report of Plaintiffs' Expert, Michael C. Herron,¹ and to examine the new analyses contained in his report. Based on my review, the conclusions contained in my March 2020 Report² do *not* change.

3. Dr. Herron's Supplemental Report includes new analyses that fail to adequately address the conclusions of my Rebuttal Report. The following summarizes the findings from my review of Dr. Herron's Supplemental Report, which are described more fully in the subsequent sections of this report:

¹ Supplemental Expert Report of Michael C. Herron, dated April 8, 2020 (hereafter, "Herron Supplemental Report").

² Rebuttal Report of Janet R. Thornton, Ph.D., dated March 24, 2020 (hereafter, "Thornton Rebuttal Report"), reviewed the Expert Report of Michael C. Herron, dated February 18, 2020 (hereafter, "Herron Report" or "February Report").

- Without justification, Dr. Herron continues to report his results on a statewide basis and argues that his reliance on statewide analyses is not problematic, thereby ignoring the individual decision-making of each county to determine the location of its polling place(s) as dictated by Georgia Statute § 21-2-265.
- He fails to consider the political make-up of the county Boards of Elections. A review of county Board of Elections websites suggests that they tend to describe themselves as being bipartisan. For example, in Bibb County, two of the five board members are Democrats, two are Republicans, and one is appointed by the county commission. The Chairman of the Board of Elections is African-American and a Democrat. Dr. Herron fails to consider the function of the county Boards of Elections and their make-up.
- Dr. Herron argues that he can assume that the percentage of closed polling places that no longer exist is uniform among African-American and Caucasian dominant polling places, even though he fails to actually test this assumption, and further assumes that I should bear the burden of this testing.
- Dr. Herron suggests that I should have sampled closed polling places to determine the reason for the closure, even though it is his burden. He fails to recognize that sampling closed polling places to adequately determine the reasons for closure would not simply involve research to determine if a place was demolished. Each county Board of Elections with changes in polling places between 2014 and 2018 would need to be contacted to understand the reasoning/rationale for each, information that a Google search would not yield.
- As a researcher, it is surprising that Dr. Herron does not understand what it means to adjust for factors other than race that may influence the county-by-county decisions to close a polling place.
 - Dr. Herron is testing only one factor to potentially explain closure and voting rates: race.
 - There are other factors that could be correlated with race, such as the location of demolished polling place facilities, the desire of facilities to no longer serve as polling places, and the usage of early voting, which may influence his outcomes and conclusions.
 - By *adusting* for these factors, Dr. Herron could determine whether the other factors, and not race, explain his findings.
- Dr. Herron's Supplemental Report selectively compares the 2014-2016 and 2016-2018 effects of voters who did not move but had new polling places to voters who did not move and did not have a polling place change.
 - His selective comparison is not limited to election day voting.
 - He fails to make the same period distinctions (i.e., 2014-2016 and 2016-2018) for any of his other comparisons included in his February Report.
 - For example, if at a minimum, he prepared the information on "closed" polling places contained in Tables 3 and 4 of his February Report separated by period, he would have reported a different conclusion for the period 2016-2018. Between 2016 and 2018, the percentage African-American among those with closed polling places is *lower*. By combining 2014 through 2018 in his February Report and continuing to do so in his Supplemental Report, Dr. Herron has hidden this difference.

- Dr. Herron erroneously argues the irrelevance of early voting and its impact on election day voting, even though he included comparisons limited to election day voting in his February Report.
 - From an economist's perspective, the placement of polling places involves finding an optimal solution while considering supply and demand for election day polling places.
 - To the extent that there is a decline in the demand for election day voting, then presumably the supply of polling places would decline.
 - Recent reporting has shown that the usage of early voting polling places has increased from 2002.
- When Dr. Herron's analyses of voting are limited to election day voting, which is relevant to the polling places at the core of his reports, African-American registered voters were "disenfranchised" *the least* compared to Caucasians for the periods 2014-2016 and 2016-2018 by changes in the polling place.

4. To arrive at these conclusions, I relied upon the programming logic that Dr. Herron produced on March 4 and April 9, 11, and 13, 2020.³ His code was modified in order to produce the polling place closure rates by period and on election day that were prepared at Tables 3, 4, 12, and 13 of his February Report, now divided into the periods 2014-2016 and 2016-2018 in his Supplemental Report.

I. Dr. Herron's Continued Reliance on Statewide Statistics is Not Justified

5. Dr. Herron argues that his use of statewide statistics is justified because the counties/jurisdictions follow state and federal law.⁴ However, his justification fails to address the role of each county Board of Elections and the independent decision-making regarding the placement and number of polling places. It is the sole responsibility of the county Boards of

³ Dr. Herron provided programming code in support of his Supplemental Report on April 9. However, he did not provide the programming code in its native format but instead as a PDF. One cannot execute his programming code as a PDF and, therefore, we requested the native format of his programming code, which was produced on April 11. However, this production failed to include all programming code to replicate his results. After the additional programming code was requested, it was produced on April 13. Appendix A lists the materials relied upon in preparation of this report.

⁴ Dr. Herron also assumes that because I do not criticize his programming code, that I agree with his findings. The programming code/logic is not the issue; it is what he instructed the programming code to do that is the issue, in particular, instructing the programming code to produce statewide statistics.

Elections, not the Secretary of State or the federal government, to determine polling place locations. Merely stating that “there is nothing problematic about analyzing election administrative practices within a state”⁵ does not provide justification for his statewide comparisons as I described in my Rebuttal Report.⁶ Dr. Herron, in his February Report, demonstrates variation by county in his Figures 1-4 yet he ignores the variation when conducting his statewide analyses, i.e., he does not control for this variation in his statewide statistics. For example, some counties moved *all* the polling places and in other counties *none* of the polling places were closed or moved.⁷ Despite Dr. Herron’s assertion that there is nothing “problematic” with a statewide analysis, the statewide analysis does not provide a representation of the actual decision-making process followed by each county Board of Elections to determine polling place locations.

6. A review of some of the county Boards of Elections reveals that in each instance they were comprised of five members consisting of both Democratic and Republican members. For example, in Fulton County, which moved and closed a number of polling places between 2014 and 2018, the Board is comprised of two Democrats, two Republicans, and one Non-affiliated. In Bibb County, a small county with a relatively higher proportion African-American with closed polling places, the Board of Elections’ website states that the Board consists of five members:

“Two members are appointed by the Republican Party Two members by the Democratic Party

⁵ Herron Supplemental Report, page 25, paragraph 55.

⁶ Thornton Rebuttal Report, pages 6-7.

⁷ This is analogous to comparisons with which I am familiar in employment matters. While there may be a company policy regarding employment practices (analogous to state/federal polling place requirements), the question becomes at what level were the decisions made and is the subjective decision making made by an overarching corporate head or at lower levels organizationally (analogous to state/federal v. county Boards of Elections). In *Wal-Mart Stores, Inc. v. Dukes, et al.*, 564 U.S. 338 (2011), the Supreme Court ruled that there was no evidence that the nationwide group of class-plaintiffs was subject to the same discriminatory employment policy; store managers (analogous to county Boards of Elections) at Wal-Mart could make their own pay and promotion decisions (analogous to decisions regarding moving/closing polling places).

A fifth member shall be appointed by the Macon-Bibb County Commission from a list of nominees voted on by a majority of the four partisan appointees.” The current Board of Elections Chairman for Bibb County is an African-American, Mr. Henry Ficklin, a Democrat.⁸

7. Dr. Herron ignores the racial and partisan make-up of each of the county Boards of Elections involved in the decisions to move or close polling places. Of these Boards of Elections (not the state or federal government), 70% chose not to reduce the number of polling places between 2014 and 2018 (i.e., the number of polling places was the same or greater in 2018 relative to 2014 in these counties) and 36% chose not to move polling places (i.e., the county did not close any polling places and among the closed polling places the county may or may not have replaced the polling places with a new location). Further, among the 101 counties with at least one closure, 54 (or 53.5%) had a higher proportion of Caucasian registered voters with a closure compared to the proportion of African-American registered voters. Dr. Herron does not refute the variation among the counties or my findings. His only justification is that there are state and federal laws, which does not address the independent decision-making by each county Board of Elections.

II. Dr. Herron Failed to Independently Determine the Reason for Closed and Moved Polling Places

8. In my Rebuttal Report, I provided examples of polling places that were “closed” due to the demolition of the building and the lack of availability of the location to continue to serve as a polling place. Dr. Herron criticizes me for providing examples of three polling places that were demolished and/or no longer available. He recommended that a random sample of

⁸ See the Macon-Bibb County Board of Elections website at <https://www.maconbibb.us/board-of-elections-2/>.

polling places be taken to determine the reasoning for closure.⁹ However, more than a Google search is required to understand the polling place changes made by county officials.

9. Dr. Herron further states that because he is comparing the rate of polling place closures in predominantly Caucasian and African-American areas of Georgia, that any inflation in the number of closures is irrelevant.¹⁰ However, he did nothing to test this assumption and, instead, has placed the burden on me to determine the reasoning behind each closure or move. It is my position that Dr. Herron made this assumption and consequently, it is his burden to test it. He has not endeavored to undertake research into the reasons for polling place closures/moves, and instead assumes that the only factor to consider is race/ethnicity on a statewide basis instead of at the decision-making level, i.e., the county Boards of Elections.

10. As a researcher, it is surprising that Dr. Herron does not understand what it means to adjust for factors other than race. There are other factors that could be correlated with race, such as the location of demolished polling place facilities, the desire of facilities to no longer serve as a polling place, and the usage of early voting, which may influence his outcomes and conclusions. By adjusting for relevant factors, Dr. Herron could determine whether they, and not race, explain his findings.¹¹ This is why I used the word “inflated,”¹² to distinguish the polling places that closed or moved because of factors which the county Boards of Elections could not

⁹ Herron Supplemental Report, page 27, paragraph 61.

¹⁰ Herron Supplemental Report, page 32, paragraph 73.

¹¹ A common theme in statistical and econometric texts is that a correlation cannot prove causation. For example, Studenmund and Cassidy state, “While many economic relationships are causal by their very nature, a regression result, no matter how statistically significant, cannot prove causality. All regression analysis can do is test whether a significant quantitative relationship exists. Judgments as to causality must also include a healthy dose of economic theory and common sense. For example, the fact that the bell on the door of a flower shop rings just before a customer enters and purchases some flowers by no means implies that the ringing of the bell causes the purchase. If events A and B are related statistically it may be that A causes B, that B causes A, that some omitted factor causes both or that a chance correlation exists between the two.” (Studenmund, A. H. and Cassidy, Henry J. (1987). *Using Econometrics: A Practical Guide*. Boston, MA: Little, Brown Company, page 5.)

¹² Herron Supplemental Report, page 30, paragraph 67.

influence or control from those decisions made solely by the county Boards of Elections for other reasons.

11. By aggregating the outcomes across counties without regard to the role of each county Board of Elections, Dr. Herron has masked these individual county level decisions. A more meaningful measure of polling place closures and movement would be to examine the county decisions that closed polling places for reasons that were made solely by the Boards (i.e., outside influences did not play a role such as a facility no longer wishing to serve as a polling place). Because these polling place decisions are a subset of the total number of closures and changes, the closure rate would be lower than the rates calculated by Dr. Herron.

III. Dr. Herron Selectively Distinguished the Periods from 2014 to 2016 and 2016 to 2018, Thereby Misleading the Court

12. In his February Report, Dr. Herron combined election cycles from 2014 through 2018, which I criticized. In response to my criticism that Dr. Herron did not separately examine the cycles from 2014 to 2016 and from 2016 to 2018,¹³ he selectively prepared new analyses that reported the outcomes from two of his several tables for the two periods (Tables 10 and 11 of the Herron February Report). To illustrate the result of this selectivity, I have additionally examined the polling place closure rates as reported in Tables 3 and 4 of Dr. Herron's February Report for the two periods.

13. At Table 3 of his February Report, Dr. Herron reported polling place closure rates by the race of registered voters, comparing polling places between 2014 and 2018. Below I have prepared the same information for the periods from 2014 to 2016 and from 2016 to 2018. The information diverges between the two periods. Between 2014 and 2016, the closure rate is higher

¹³ Herron Supplemental Report, page 34, paragraph 76.

among African-American compared to Caucasian registered voters. However, between 2016 and 2018, the closure rate is lower among African-American compared to Caucasian registered voters. Therefore, the African-American closure rate is not consistently higher over the period, contrary to Dr. Herron's finding when he combined the two distinct periods.

**Table 1—Dr. Herron's February Report, Table 3
Polling Place Closure Rates by Race, 2014-2016 and 2016-2018**

Race	2014-2016			2016-2018		
	Registered Voters	Closed	Percent Closed	Registered Voters	Closed	Percent Closed
White	3,382,803	289,117	8.55%	3,721,448	385,048	10.35%
Black	1,793,742	185,807	10.36	2,007,233	189,231	9.43
Unknown	440,652	45,936	10.42%	554,386	59,632	10.76%
Hispanic	121,373	12,456	10.26%	161,034	13,888	8.62%
Asian/Pacific Islander	93,005	8,263	8.88%	121,417	10,251	8.44%
Other	66,082	6,518	9.86%	81,758	7,956	9.73%
American Indian/Alaskan	3,385	357	10.55%	5,391	468	8.68%

14. At Table 4 of his February Report, Dr. Herron counts the number of closed polling places between 2014 and 2018. He distinguishes each polling place as being an African-American majority or not, by using the percentage African-American among the registered voters associated with the polling place. At Table 4, he applies a 50% threshold to classify African-American polling places. I have similarly prepared the same information as contained in Dr. Herron's Table 4, but distinguishing the periods 2014-2016 and 2016-2018.

15. Consistent with closure rates by race reported in Table 1 above, the information diverges between the two periods. Between 2014 and 2016, the closure rate is higher among polling places labelled African-American. In contrast, between 2016 and 2018, the closure rate is *lower* among the polling places classified as African-American using the 50% threshold.

Therefore, the African-American closure rate is not consistently higher over the period contrary to Dr. Herron's finding when he combined the two distinct periods.

**Table 2—Dr. Herron's February Report, Table 4
Closures Among Black Majority Polling Places, 2014-2016 and 2016-2018**

Black Majority	Closed	2014-2016		2016-2018	
		Count	Closure Rate	Count	Closure Rate
No	No	1,784		1,696	
No	Yes	190	9.63%	200	10.55%
Yes	No	468		493	
Yes	Yes	74	13.65%	50	9.21%

16. These comparisons illustrate the selective reporting by Dr. Herron with respect to the information that he chose to report for the two periods in his Supplemental Report. The closures that occurred between 2016 and 2018 as reported above were the closures that occurred prior to the 2018 election. These comparisons show that prior to the 2018 election (i.e., period between 2016 and 2018 election) the closure rate was *lower* among African-Americans using the methodology applied by Dr. Herron to measure closures.

17.

IV. Dr. Herron's Voting Comparisons Incorrectly Include Early Voting

18. In his Supplemental Report, Dr. Herron selectively chose to divide the 2014 to 2018 period into 2014-2016 and 2016-2018 for two of his February Report tables (Tables 10 and 11). At Tables 1 and 2 of his Supplemental Report, he provides the information formerly at Table 10 and 11 of his February Report for the period 2014 to 2016.¹⁴ Similarly, at Tables 3 and 4 of his

¹⁴ Herron Supplemental Report, pages 39 and 40. Table 1 provides the distribution of voters by race between new voting places and unchanged voting places between 2014 and 2016. Table 2 is the same information but limited to 2014 voters.

Supplemental Report, Dr. Herron provides the same information for the period 2016 to 2018.¹⁵ He selectively did not do the same for Tables 12 and 13 (or any of his other tables) that focused on election day voting, which is the voting relevant to the number and location of polling places.

19. Even though Dr. Herron included tables in his February Report that focused on election day ballots, he now argues that a voter may cast an absentee or early ballot because of polling place closures. He does not provide any justification for this view which is contrary to the pattern of early voting nationwide.

20. A 2016 Washington Post article reported on the increasing usage and value of early voting: “The value of early voting to candidates doesn’t lie solely in increasing turnout, of course. Instead, it’s valuable because it increases the amount of time that campaigns have to get their base of voters to the polls. For Democrats, that can be important: Younger voters and people of color tend to turn out less regularly. Such increases are at the margins, a few hundred or few thousands in a handful of races.”¹⁶

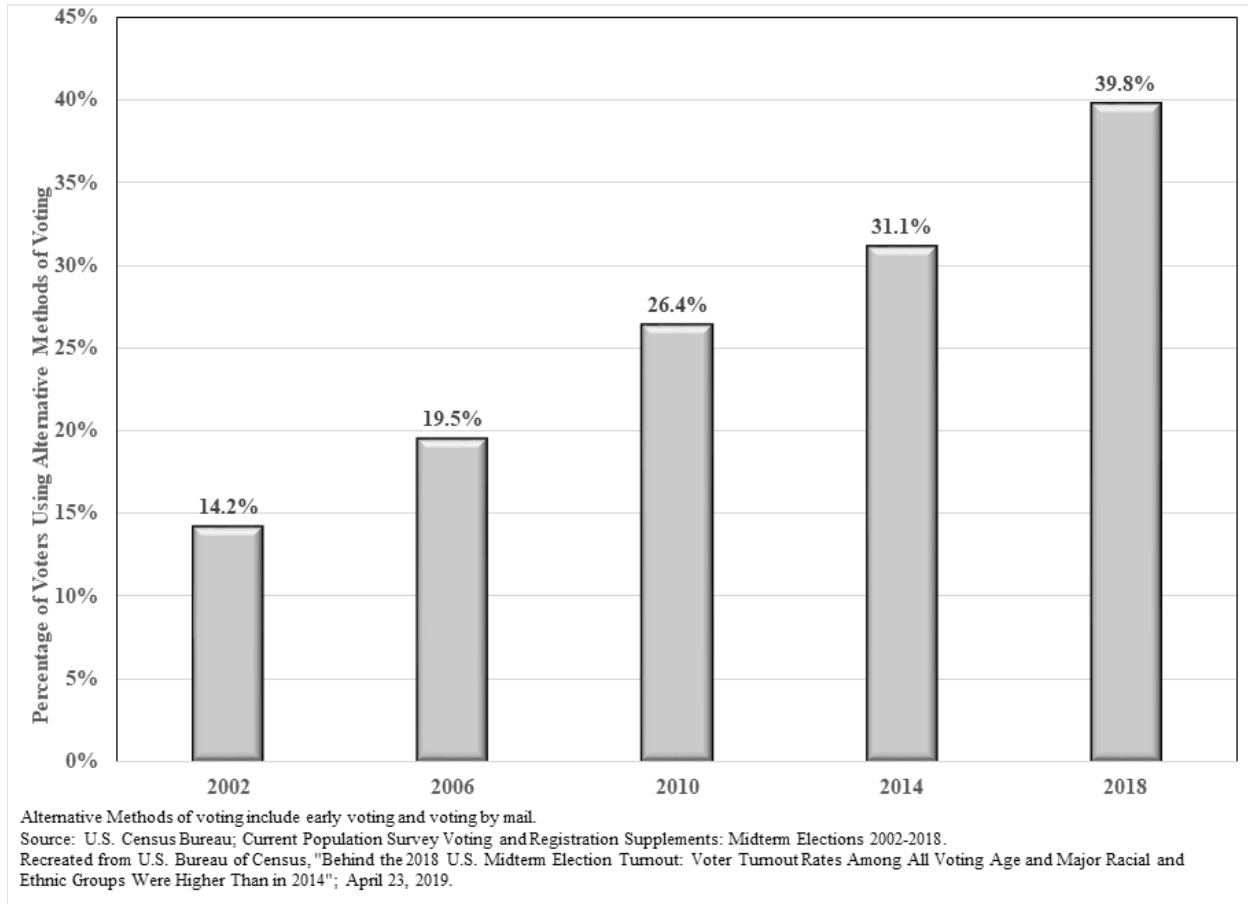
21. As the Bureau of Census reports, the availability of alternative voting, such as early voting and voting by mail, has changed how voters vote. The Bureau reports that in 2018, nationwide, 40% of voters used an alternative voting method rather than voting on election day. Additionally, while the usage of alternative voting tends to decline slightly during midterm elections relative to presidential elections, that was not the case in 2018. Instead, in 2018 the rate of alternative voting usage was not significantly different from the rate from the 2016 presidential

¹⁵ Herron Supplemental Report, page 44. Table 3 provides the distribution of voters by race between new voting places and unchanged voting places between 2016 and 2018. Table 4 is the same information but limited to 2016 voters. Dr. Herron appears to have the incorrect label on Table 4 as it compares 2016-2018 and not 2014-2016 based on the subsequent paragraph on page 45 of his report.

¹⁶ Bump, Philip. (2016, December 16). “America Keeps Voting Earlier And It Keeps Not Affecting Turnout that Much.” *The Washington Post*. Retrieved from: <https://www.washingtonpost.com/news/the-fix/wp/2016/12/29/america-keeps-voting-earlier-and-it-keeps-not-affecting-turnout-that-much/>.

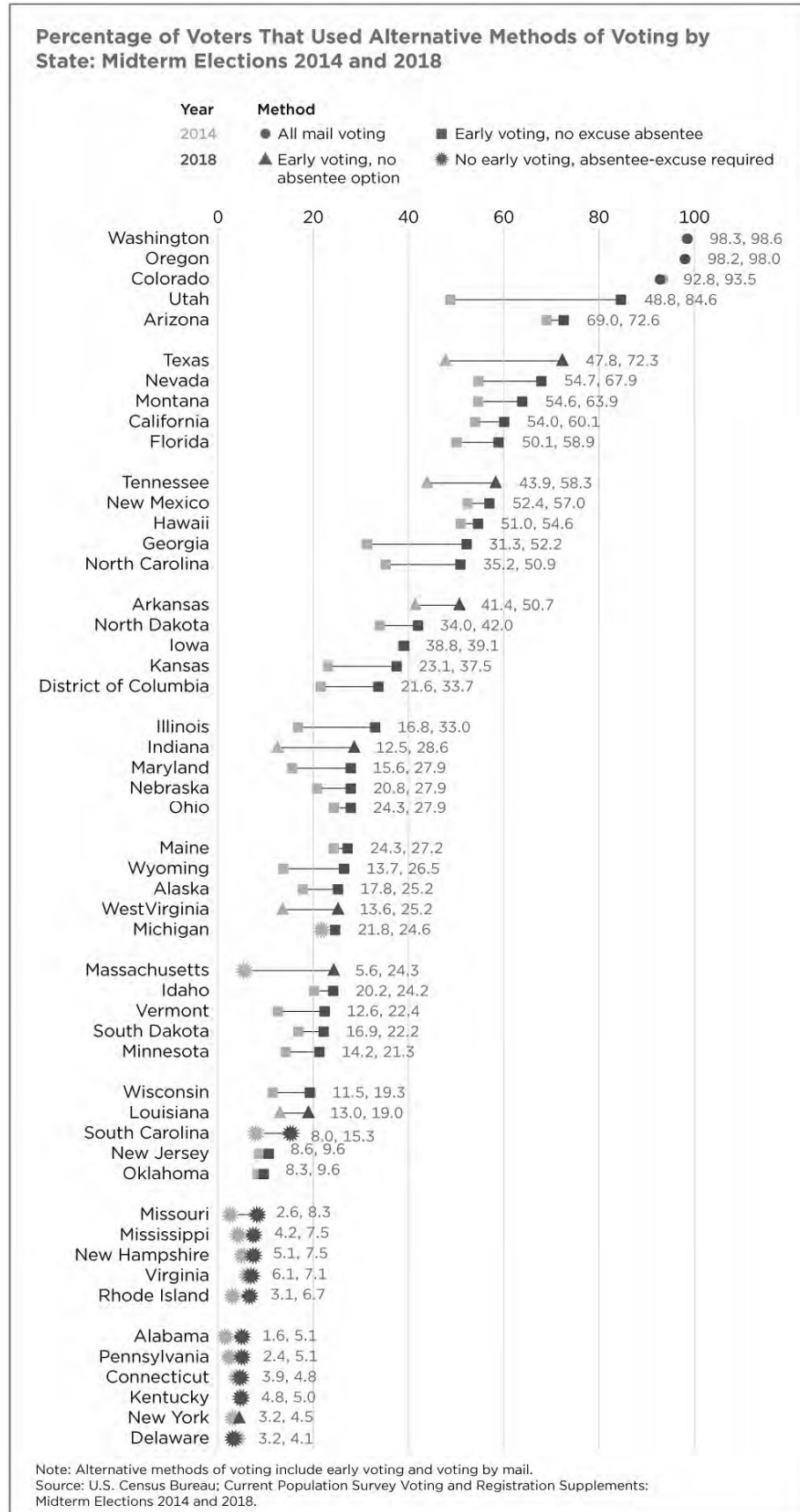
election. The following figure depicts the increasing usage of alternative voting in midterm elections from 2002 through 2018, nationwide as reported by the Bureau of Census.

Figure 1—Percentage Uses of Alternative Voting Methods (Mail-in and Early Voting Ballots) in Midterm Elections from 2002 through 2018



22. In addition, Georgia was one of three states with the highest percentage point increases in alternative voting rates from 2014 to 2018, with an increase of 21 percentage points. The Bureau of Census attributes the increase to high profile elections in 2018, not polling place closures. The chart below provided by the Bureau of Census shows the change in the usage of alternative voting by state.¹⁷

¹⁷ Misra, Jordan. (2019, April 23). "Voter Turnout Rates Among All Voting Age and Major Racial and Ethnic Groups Were Higher Than in 2014." U.S. Bureau of Census, *Behind the 2018 U.S. Midterm Election Turnout*. Retrieved from: <https://www.census.gov/library/stories/2019/04/behind-2018-united-states-midterm-election-turnout.html>.



23. In addition to the general trend of increased alternative voting, in 2018, African-American voters in particular used early voting polling places at a higher rate.¹⁸ Recall from my Rebuttal Report that Georgia voters have increased their usage of early voting polling places at a much higher rate than their usage of absentee ballots.¹⁹ Thus, Dr. Herron has falsely minimized the importance of in-person early voting on the need for election day polling places, i.e., there has been a reduction in the demand for election day polling places.

Table 3—Method of Alternative Voting among Each Racial/Ethnic Group November 2018 Election

Racial/Ethnic Group	In-person Before Election Day	By mail
White alone	16.2%	24.0%
White non-Hispanic alone	15.9%	23.5%
Black alone	21.8	11.0%
Asian alone	11.0%	41.0%
Hispanic (of any race)	17.8%	27.3%
White alone or in combination	16.1%	24.1%
Black alone or in combination	21.4%	11.4%
Asian alone or in combination	11.5%	40.2%
Source: U.S. Bureau of Census, Voting and Registration in the Election of November 2018, Table 14, available at: https://www.census.gov/data/tables/time-series/demo/voting-and-registration/p20-583.html		

¹⁸ U.S. Bureau of Census. (April 2019). "Voting and Registration in the Election of November 2018," Table 14. Available at: <https://www.census.gov/data/tables/time-series/demo/voting-and-registration/p20-583.html>

¹⁹ As I reported in my Rebuttal Report, I examined the way Georgia voted during the 2014 and 2018 general elections by type of ballot cast. As shown in the table below, Georgia registered voters increased their usage of absentee ballots (mail) and early voting and reduced their usage of election day ballots between 2014 and 2018.

Type of Voter Participation by Election in Georgia

General Election Year	Election Day	UOCAVA	Mail	Provisional Ballot	Early Voting
2014	62.90%	0.05%	4.10%	0.27%	32.68%
2018	46.07%	0.14%	5.58%	0.30%	47.91%
Source: U.S. Election Assistance Commission Data (EAC), 2014 and 2018 elections: https://www.eac.gov/research-and-data/datasets-codebooks-and-surveys .					

24. The question is, then, which came first, polling place closures or the trend in the usage of alternative voting. The nationwide statistics show that usage of early voting was increasing well before the closures that Dr. Herron measured. Thus, the relevant comparison of polling place closures and changes is election day voting and not all voting.

25. At Tables 12 and 13 of his February Report,²⁰ Dr. Herron makes just such a comparison, examining voter turnout as a function of polling place changes after limiting the comparisons to election day voting. At Table 12, the difference in the distribution between the percentage African-American among changed and unchanged polling places is less than it is for any other racial/ethnic category. Similarly, at Table 13, Dr. Herron further restricted the voters to those who also voted in 2014. Again, the difference in the distribution between the percentage African-American among those with and without a change in polling places is less than it is for any other racial/ethnic category.

26. I have also prepared the information contained in Dr. Herron's Tables 12 and 13 for the two periods, 2014-2016 and 2016-2018. The table below shows that, regardless of the period, the decline in turnout is greater among Caucasians, particularly during the 2016-2018 period. During the 2016-2018 period, the percentage Caucasian among those voters with a new polling place on election day is 26.16% compared to 30.75% among voters without a polling place change, a difference of -4.59 percentage points. For the same period, the percentage African-American among those voters with a new polling place on election day is 21.57% compared to 24.26% among voters without a polling place change, a difference of -2.69 percentage points. Consequently, the difference in the distribution percentage reported by Dr. Herron is *smaller* for African-Americans compared to Caucasians, regardless of the time period.

²⁰ Herron Report, pages 73 and 74.

Table 4—General Election Day Turnout by Race as a Function of Polling Place Changes

Race	Registered Voters	New Place	Not New	Difference
<i>2016 General Election Day Turnout as a Function of 2014-2016 Polling Place Changes</i>				
White	2,899,943	23.91%	26.83%	-2.92
Black	1,460,087	19.55	20.85	-1.30
Unknown	370,663	17.30%	19.60%	-2.30
Hispanic	97,928	22.17%	24.59%	-2.42
Asian/Pacific Islander	78,793	20.49%	23.47%	-2.98
Other	54,207	18.50%	21.32%	-2.82
American Indian/Alaskan	2,526	15.47%	20.28%	-4.82
<i>2018 General Election Day Turnout as a Function of 2016-2018 Polling Place Changes</i>				
White	2,788,963	26.16%	30.75%	-4.59
Black	1,394,610	21.57	24.26	-2.69
Unknown	387,959	20.90%	22.75%	-1.85
Hispanic	112,315	25.09%	27.64%	-2.55
Asian/Pacific Islander	89,874	22.99%	24.81%	-1.82
Other	55,569	21.90%	25.06%	-3.16
American Indian/Alaskan	3,862	18.26%	22.40%	-4.15

27. Similarly, at Table 13 of his February Report, Dr. Herron limited the comparison to those who also voted in 2014. I have prepared a similar comparison but for the two periods, 2014-2016 and 2016-2018. Regardless of the period, the difference in the distribution percentage is *smaller* for African-Americans compared to Caucasians.

Table 5—General Election Day Turnout by Race as a Function of Polling Place Changes, Limited to Those who Voted in 2014 and 2016, Respectively

Race	Registered Voters	New Place	Not New	Difference
<i>2016 General Election Day Turnout as a Function of 2014-2016 Polling Place Changes, Limited to 2014 Voters</i>				
White	1,441,693	31.02%	34.90%	-3.88
Black	621,184	27.47	29.08	-1.61
Unknown	109,115	29.13%	32.96%	-3.83
Hispanic	21,774	39.04%	42.40%	-3.36
Asian/Pacific Islander	18,156	33.06%	40.92%	-7.86
Other	15,853	32.23%	35.85%	-3.62
American Indian/Alaskan	586	17.24%	36.55%	-19.31
<i>2018 General Election Day Turnout as a Function of 2016-2018 Polling Place Changes, Limited to 2016 Voters</i>				
White	2,116,841	32.14%	38.05%	-5.91
Black	916,052	28.93	32.25	-3.32
Unknown	220,282	31.69%	35.26%	-3.58
Hispanic	69,313	35.97%	39.38%	-3.41
Asian/Pacific Islander	54,287	32.44%	35.59%	-3.16
Other	33,483	31.37%	36.21%	-4.85
American Indian/Alaskan	2,210	28.71%	33.47%	-4.75

V. Conclusions

28. In his Supplemental Report, Dr. Herron did not refute my calculations or find error in my findings. Instead, he continues to provide statewide statistics that mask the individualized county-by-county decisions and selectively prepared new analyses that separated the 2014 to 2018 period. The county Boards of Elections are responsible for the decision-making to determine the number and location of each polling place as dictated by Georgia Statute § 21-2-265. Dr. Herron merely states that jurisdictions have to follow state and federal law, which provides no explanation for the variation by county in the number of closed polling places and changes to polling places. When examined by county as provided in my Rebuttal Report, there are *fewer* counties with a higher African-American closure rate.

29. Dr. Herron fails to recognize that sampling closed polling places to adequately determine the reasons for closure would not simply involve researching to determine if a place has been demolished, but would require determining from each of the counties who made the historical decisions and the rationale behind the decisions, because polling places are closed for reasons other than demolition, such as the changing desire of facilities to serve as polling places. It is Dr. Herron's burden to rule out potential reasons, rather than assuming that the presumed race of the precinct was the impetus for the polling place changes.

30. As a researcher, it is surprising that Dr. Herron does not understand what it means to adjust for other factors. Dr. Herron is testing only one factor in his comparison, race/ethnicity. However, there are other factors that could be correlated with race/ethnicity, such as the location of demolished polling place facilities, the desire of facilities to no longer serve as polling places, and the usage of early voting, which may influence his outcomes and conclusions. By adjusting for these factors, Dr. Herron could determine whether they, and not race, explain his findings.

31. Dr. Herron's Supplemental Report provides new analyses that compare the 2014-2016 and 2016-2018 effects of voters who did not move but had new polling places to voters who did not move and did not have a polling place change. However, Dr. Herron is quite selective in his choice of results to report. He limits his comparison of voting by these two groups of voters (i.e., those with and without a change in polling place) to race alone. Dr. Herron fails to separate the two periods for any of his other February Report comparisons. If he, at a minimum, had prepared this same comparison for the "closed" polling places contained in Tables 3 and 4 of his February Report, he would have reported that there is a different conclusion drawn between 2014-2016 as compared to 2016-2018. Between 2016 and 2018, the percentage African-American

among those with closed polling places is *lower* for this period. Thus, by combining 2014 through 2018 in his February Report, Dr. Herron has masked this difference.

31. Dr. Herron erroneously argues the irrelevance of early voting and its impact on election day voting. Yet, contrary to this argument, he provided election day comparisons in his February Report. From an economist's perspective, the placement of polling places involves finding an optimal solution while considering supply and demand. To the extent that there is a decline in the demand for election day voting, then presumably the supply of polling places would decline. Recent reporting has shown that the usage of early voting polling places has increased since 2002.

32. When Dr. Herron's analyses of voting are limited to the election day voting, which is relevant to the polling places at the core of his reports, African-American registered voters were "disenfranchised" *the least* compared to Caucasians for the periods 2014-2016 and 2016-2018 by changes in the polling place.

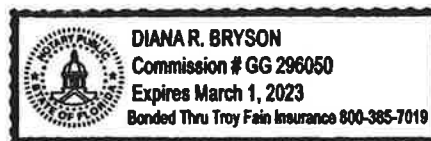
I have read the foregoing statement consisting of 32 paragraphs and swear that it is true and accurate to the best of my knowledge and belief.

Janet R. Thornton

Janet R. Thornton, Ph.D.

Subscribed and sworn to before me
this 30TH day of April, 2020.

Diana R. Bryson



Appendix A

Materials Relied Upon

Materials Relied On

- Amended Complaint for Declaratory and Injunctive Relief, dated February 19, 2019
- Expert Report of Michael C. Herron, Ph.D., dated February 18, 2020, and supporting materials
- Supplemental Report of Michael C. Herron, Ph.D., dated April 8, 2020, and supporting materials
- Additional materials in support of his February 18, 2020 report provided on March 4, 2020
- Additional materials in support of his April 8, 2020 report provided on April 9, 11, and 13
- Deposition of Michael C. Herron, Ph.D., dated February 26, 2020
- Statute regarding selection of polling places (Ga. Code Ann., § 21-2-265)
- Publicly available data as referenced in the report

DEFENDANTS' EX. 3

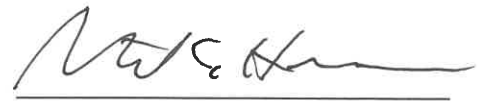
**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

FAIR FIGHT ACTION, et al.,)	
)	
Plaintiffs,)	
)	
v.)	Civ. Action No. 1:18-cv-05391-SCJ
)	
BRAD RAFFENSPERGER,)	
in his official capacity as)	
Secretary of State of the)	
State of Georgia, et al.,)	
)	
Defendants.)	

EXPERT REPORT OF MICHAEL C. HERRON

William Clinton Story Remsen 1943 Professor,
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Dartmouth College
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Hanover, NH 03755-3547

February 18, 2020



Michael C. Herron, Ph.D.

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1 Summary of conclusions

1 Registered voters in Georgia who cast their ballots on election day are required to use the polling places assigned to them by elections officials. Between the General Elections of 2014 and 2018, a total of 459 of 2,516 polling places used in Georgia closed, and this affected over a million registered voters in the state. In particular, voters assigned to closed polling places were by necessity assigned new polling places in time for the 2018 General Election. In addition, some registered voters in Georgia were assigned new polling places for the 2018 General Election even though the polling places they used in 2014 had not closed.

2 Prior to *Shelby County v. Holder* (2013), per the Voting Rights Act significant changes in election administration practices in Georgia—like large-scale polling place adjustments—had to be cleared by the United States federal government before they could be implemented. The *Shelby County* decision vitiated this requirement.

3 The adjustments made to Georgia’s polling places between 2014 and 2018 were not racially neutral. In particular, black registered voters were disproportionately more likely than white registered voters to have their polling places changed between 2014 and 2018. In addition, polling places with a black majority of registered voters in 2014 were more likely to be closed than polling places without a black majority.

4 Existing literature in political science shows that being assigned to a new polling place can have negative effects on a state's registered voters and in particular can impact subsequent election turnout. I find evidence that voter turnout in Georgia is consistent with this general result.

5 In particular, there are two ways to vote in Georgia: absentee (either via mail or in-person) and on election day. Among Georgia registrants who did not move between 2014 and 2018, those who received new polling places between 2014 and 2018 were less likely to vote on election day in 2018. These individuals were also less likely to vote overall in the 2018 General Election. These findings hold as well when restricting attention to politically engaged registered voters in Georgia, namely, those who voted in the 2014 General Election.

6 These results on turnout in the 2018 General Election show that the precinct-related administrative decisions made by elections officials in Georgia in the time period 2014 to 2018 portended downstream consequences for election turnout. Insofar as precinct adjustments in Georgia between 2014 and 2018 were not racially neutral, these downstream consequences were not racially neutral, either.

2 Overview of report

7 In the matter of *Fair Fight Action, Inc., et al. v. Brad Raffensberger, et al.*, I have been engaged by plaintiffs’ counsel to assess the extent to which polling place adjustments were made in Georgia between the 2014 and 2018 General Elections. I was also asked to analyze whether the adjustments in this time period, to the extent that they existed, were racially neutral (meaning that they affected all racial groups in Georgia approximately equally) or were not racially neutral (meaning that they affected some racial groups more than others). With respect to a potential interaction between polling place adjustments and race, I was asked in particular to focus on white and black registered voters in Georgia. These are the two largest racial groups in the state and together constitute over 90 percent of Georgia’s population.¹

8 In this report, I use the term “polling place” to mean a physical address where individuals can cast ballots on election day. A polling place is distinct from a precinct, which per O.C.G.A. § 21-2-2 “means a geographical area...from which all electors vote at one polling place.”² I can thus write of a polling place that has closed—meaning, election day voting no longer takes place at said place. While a precinct in the sense of O.C.G.A. § 21-2-2 can be adjusted, as a geographical area it cannot be said to have closed.

¹*QuickFacts Georgia*, United States Census Bureau (as of July 1, 2019), available at <https://www.census.gov/quickfacts/GA> (last accessed February 14, 2020).

²For the text of O.C.G.A. § 21-2-2, see <https://law.justia.com/codes/georgia/2010/title-21/chapter-2/article-1/21-2-2> (last accessed February 14, 2020).

9 In public discourse, “polling places” and “precincts” are sometimes used interchangeably.³ However, since this report’s primary focus is on the literal places in Georgia where Georgia voters cast ballots, I distinguish between these terms as described in the paragraph above.

10 The focus of this report on election day polling places in Georgia reflects the fact that election day voting is a major component of voter turnout in contemporary Georgia statewide elections. In the 2014 General Election, total turnout in Georgia was 2,597,088 voters of whom 1,641,657 (approximately 63 percent) cast their ballots on election day.⁴ The other Georgia voters in this election cast absentee ballots, either by mail or in-person, prior to November 4, 2014.⁵ In the 2016 General Election, total voter turnout in

³Mark Niese and Nick Thieme, *Precinct closures harm voter turnout in Georgia*, *AJC analysis finds*, The Atlanta Journal-Constitution (December 13, 2019), available at <https://www.ajc.com/news/state--regional-govt--politics/precinct-closures-harm-voter-turnout-georgia-ajc-analysis-finds/11sVcLyQChuQRC8qtZ61YP> (last accessed February 14, 2020).

⁴This turnout number is based on the number of rows in the 2014 General Election turnout file, available from the Georgia Secretary of State at <https://elections.sos.ga.gov/Elections/voterhistory.do> (last accessed November 23, 2019). The turnout number differs slightly from the election turnout figure of 2,596,947 that appears in the Secretary of State’s results summary of the 2014 General Election. See <https://results.enr.clarityelections.com/GA/54042/149045/en/summary.html> (last accessed February 6, 2020) for this summary. The reason that I use the Georgia Secretary of State’s turnout file as the source for total turnout in Georgia in the 2014 General Election is to maintain consistency with data used in this report. In particular, the 2014 General Election turnout file can be linked to the voter-level datasets that, as explained later, I use to draw conclusions about the extent to which precinct adjustments in Georgia in the period 2014 to 2018 were racially neutral.

⁵Georgia voters casting in-person votes prior to an election are said in the state to vote in-person absentee as opposed to mail absentee. In other states, in-person absentee voters would be classified as “early” voters. Methods of voting are described by the Georgia Secretary of State at https://sos.ga.gov/index.php/elections/ways_to_vote_in_georgia (last accessed December 6, 2019).

Georgia was 4,166,929 of whom 1,736,828 voters (approximately 41.7 percent) cast ballots on election day.⁶ In 2018, approximately 46.4 percent of Georgia voters cast their ballots on election day. Thus, while in-person, election day voting is not presently used by all Georgia voters, in the three most recent statewide elections in Georgia it was used by a large percentage of them.

11 When voting on election day in Georgia, eligible voters must cast their ballots at polling places assigned by election officials. A Georgia voter who wishes to cast a ballot on election day does not have a choice over which polling place he or she is permitted to use.

12 In the time period between elections, jurisdictions in the United States, like states or counties, may consider changing the polling places to which their registered voters are assigned. In Georgia, changing polling places was historically regulated by Sections 4 and 5 of the federal Voting Rights Act. This legislation mandated that so-called “covered jurisdictions”—of which Georgia was one—had to clear proposed election administration changes with federal authorities prior to implementing said changes.⁷

⁶Parallel to the fn. 4, the 2016 overall turnout number differs slightly from the 2016 turnout figure (4,165,405) reported by the Georgia Secretary of State on its election website. See <https://results.enr.clarityelections.com/GA/63991/184321/en/summary.html> (last accessed February 6, 2020).

⁷*About Section 5 of The Voting Rights Act*, The United States Department of Justice, available at <https://www.justice.gov/crt/about-section-5-voting-rights-act> (last accessed February 10, 2020).

13 On June 25, 2013, the United States Supreme Court in *Shelby County v. Holder* ruled that Section 4 of the Voting Rights Act is unconstitutional. This ended the requirement that election jurisdictions in Georgia receive permission prior to implementing changes to the way that they administer elections.⁸

14 Post-*Shelby County*, a jurisdiction in Georgia can, for example, close some of its existing polling places and assign the registered voters who would have voted at these places to new places that may or may not have previously existed. Or, a jurisdiction in Georgia can change its polling places without closing any of them by, for example, shifting registered voters from a set of existing polling places to a different set of places. A jurisdiction that carries out the sort of administrative adjustments described above can be said to have engaged in an exercise called “reprecincting.”

15 I use the term “reprecincting” to refer to changes either in precinct boundaries or polling places. Notwithstanding the distinction between polling places (physical addresses where voters cast ballots) and precincts (geographical areas from which voters cast ballots in polling places), this is how the term is used in the academic literature on election administration.

16 As I will demonstrate in this report, numerous counties in Georgia engaged in reprecincting between the 2014 General Election and the 2018

⁸For details pertaining to *Shelby County v. Holder*, see <https://www.oyez.org/cases/2012/12-96> (last accessed February 10, 2020).

General Election. Not all 159 counties in the state engaged in reprecincting exercises between these two statewide elections, however, and there was variance across the counties that did engage in reprecincting in the extent to which they adjusted their polling places.

17 Scholars have shown that registered voters whose polling places change—that is, registrants who have been “reprecincted”—have lower likelihoods of voting in future elections (Brady and McNulty, 2011; Amos, Smith and Ste. Claire, 2017). This finding implies that reprecincting procedures are not necessarily politically neutral. Such a lack of neutrality would be induced if, for example, in a jurisdiction of interest the likelihood of being reprecincted in a given time period varied by voter type, i.e., by racial or partisan group.

18 With this discussion of polling places and reprecincting as background, I accomplish the followings tasks in this report.

1. I characterize the extent to which polling places in Georgia closed between the 2014 and 2018 General Elections in the state. This entire time period is post-*Shelby County*.
2. I assess the extent to which the 2014-2018 polling place closures in Georgia were racially neutral, and I find that they were not. This conclusion is based on three approaches to studying polling place closures, all of which show that black registered voters in Georgia were dispro-

portionately affected by closed polling places in the state compared to white registered voters.

3. I analyze registered voters in Georgia whose addresses did not change between 2014 and 2018. I focus on these “non-movers” because the only reason that these individuals would have been assigned to new polling places between 2014 and 2018 is if they were reprecincted in some fashion. In contrast, movers in Georgia, by virtue of their moving, may be assigned to new polling places if they move sufficiently far from their original residences. I characterize the extent to which non-movers in Georgia were affected by the reprecincting across Georgia that took place between 2014 and 2018 and find that non-moving black registered voters in Georgia were disproportionately affected by the reprecincting in the state compared to white registered voters.
4. I show that non-moving, reprecincted registrants in Georgia had lower voter turnout rates in the 2018 General Election compared to non-moving, non-reprecincted registered voters. In other words, receiving a new polling place in the period 2014-2018 is associated with lower turnout in November 2018. This finding holds even restricting attention to politically active registered voters in Georgia.

3 Qualifications

19 This section of the report describes my background and explains why I am qualified to render an opinion on the reprecincting in Georgia that took place between 2014 and 2018.

20 I am the William Clinton Story Remsen 1943 Professor of Government and Chair of the Program in Quantitative Social Science at Dartmouth College in Hanover, New Hampshire. I have taught at Dartmouth since 2003 and previously was on the faculty of Northwestern University. I have served as a visiting professor at Harvard University (July 2008–January 2009), the University of Rochester (September 2006–December 2006), and the Hertie School of Governance in Berlin (August 2011–August 2012). I have also served as a visiting scholar at the Hertie School of Governance (August 2016–July 2017).

21 In January 1998, I received a doctorate in the field of Political Economy from the Graduate School of Business at Stanford University. I also have a master’s degree in statistics from Stanford University (June 1995), a master’s degree in political science from the University of Dayton (August 1992), and a bachelor’s degree in mathematics and economics from Carnegie-Mellon University (May 1989).

22 I have published many peer-reviewed, scholarly articles on election administration. Among other subjects, I have written on the effects of ballot formats, patterns in invalid votes, the availability of early voting, and polling place congestion. My articles rely on statistical analyses, and my ongoing research agenda focuses heavily on issues in election administration.

23 I have published in many political science journals including the field's top general journals (*American Political Science Review*, *American Journal of Political Science*, and *Journal of Politics*). I have published in specialty journals as well (*Election Law Journal*, *American Politics Research*, and *Legislative Studies Quarterly*). All of these journals are peer-reviewed. My *curriculum vitae*, which lists all of my published papers, including those authored within the last ten years, is attached to this report as an appendix.

24 I was a testifying expert for plaintiffs in *League of Women Voters of New Hampshire et al. v. William M. Gardner et al.* (226-2017-CV-433) and in *Veasey et al. v. Abbott et al.* (265 F. Supp. 3d 684 (S.D. Tex. 2017)) and a testifying expert for defendants in *Jennings v. Elections Canvassing Commission of Florida* (2006 WL 4404531 (Fla.Cir.Ct.)). These cases relate to aspects of election law and election administration.

25 The methodologies used throughout this report are typical of, and in some cases identical to, techniques that I have used in the past and continue to use regularly as part of my academic research. The statistical calculations

that I made as part of the report were generated using the R statistical computing environment, Version 3.6.1 (R Core Team, 2019), and Stata Version 14 (StataCorp, 2015).

26 I am being paid at a rate of \$400/hour for work on this report.

4 Data used in this report

27 My report's empirical results on the reprecincting carried out in Georgia between 2014 and 2018 draw on a variety of different sources of data. I describe these sources in this section of the report.

28 After characterizing the report's data sources, I then describe some data manipulations that I carried out on them prior to drawing conclusions.

4.1 Georgia voterfiles

29 To analyze the extent to which Georgia's polling places were changed between the 2014 and 2018 General Elections and to assess whether changes to these places were racially neutral, I must identify the registered voters in Georgia whose polling places were constant in this time period and those whose polling places changed. Key to these tasks are lists of registered voters in Georgia that date to 2014, 2016, and 2018.⁹

⁹The Georgia Secretary of State distinguishes between active and inactive registered voters, and it is my understanding that the voterfiles that I use in this report include both types. This conclusion is based on the following logic. As of 2018

30 Registered voters in Georgia are enumerated in what the Georgia Secretary of State calls a “voter registration list.” A generic term for such a list is a statewide *voterfile*, and I use that term throughout this report. A voterfile consists of a list of registered voters in a state with accompanying demographic details. According to the Georgia Secretary of State, the Georgia voterfile contains demographic fields that, among other things, track registered voter race, gender, and date of birth.¹⁰

31 In some states, like Georgia and its neighboring state of Florida, voterfiles are public documents. In other states, like New Hampshire, voterfiles are not public.

4.1.1 Overview of Georgia voterfiles

32 The three Georgia voterfiles that I use in this report have effective dates of October 24, 2014, October 26, 2016, and October 15, 2018. This means, for example, that the foremost voterfile lists registered voters in Georgia as of October 24, 2014, and the lattermost, registered voters as of October

General Election, the Georgia Secretary of State reports that there were 6,428,581 active registered voters in the state along with 507,235 inactive voters. For these two figures, see “HISTORICAL VOTER REGISTRATION STATISTICS,” available at <https://sos.ga.gov/admin/files/Voter%20Registration%20Statistics%20Historical%20-%20Updated%2011-26-18.pdf> (last accessed February 15, 2020). The sum of active and inactive registered voters in Georgia is, according to the Georgia Secretary of State, 6,935,816. My 2018 voterfile contains information on 6,928,150 registered voters in Georgia, and this latter number is quite close to 6,935,816.

¹⁰For details on the demographic variables that are included in Georgia voterfiles, see *ORDER VOTER REGISTRATION LISTS AND FILES*, Georgia Secretary of State, available at https://sos.ga.gov/index.php/elections/order_voter_registration_lists_and_files (last accessed February 7, 2020).

15, 2018. Hereinafter I refer to the three aforementioned voterfiles as the *2014 voterfile*, the *2016 voterfile*, and the *2018 voterfile*, respectively.

33 Georgia voterfiles include official voter registration numbers, which to the best of my knowledge are unique to individual registrants. Each Georgia voter registration number is eight digits long, and these numbers can be used to track individual registered voters across voterfiles.

34 I discuss my 2014, 2016, and 2018 Georgia voterfiles below, and in the processes of this explain that what I call the 2014 voterfile is actually a subset of the complete 2014 Georgia voterfile. For the moment, though, it suffices to note that I verified that my 2014 voterfile does not contain duplicate voter registration numbers. I carried out this verification as an integrity check on the 2014 voterfile. For the same purpose I verified the uniqueness of voter registration numbers in the 2016 and 2018 voterfiles as well.

35 Any individual who registered to vote in Georgia between the effective dates of the 2014 and 2018 voterfiles used in this report will appear in the latter but not the former. There are 5,245,872 individuals in the 2014 voterfile who also appear in the 2018 voterfile. Thus, approximately 86.7 percent of the 6,053,385 individual records in the 2014 voterfile can be linked to records in the 2018 voterfile.

36 Some of my conclusions about polling place changes in Georgia between 2014 and 2018 are based on analyses of registered voters who appear in both the 2014 and 2018 Georgia voterfiles. That said, the aforementioned set of 5,245,872 registered voters who appear in these two files is an important one.

4.1.2 The 2014 Georgia voterfile

37 I now present some details on the 2014 Georgia voterfile.

38 The 2014 voterfile that I use in this report is one component of a larger SQLite database, produced by the State in discovery, that itself contains 12 separate tables.¹¹ SQLite is a standard electronic format for a database, and I was able to access the database provided to me without difficulty. Of the 12 tables in the database, I use two in this report.

39 The SQLite database table titled “Voters” (6,053,391 rows) lists registered voters in Georgia in 2014. This table, one of 12 in the database that I described above, is what I call the 2014 voterfile.

40 While the 2014 voterfile contains 6,053,391 registered voters, six of these individuals have no associated county. In particular, the 2014 voterfile

¹¹The SQLite database is contained in a file named “STATE-DEFENDANTS-00089546.DB3.” I was provided this file by Counsel. Counsel provided me as well with a file named, “STATE-DEFENDANTS-00089546_Metadata.xlsx.” This file is an Excel spreadsheet, and Column S in the spreadsheet states that the last modification date of the SQList database was October 24, 2014. I use this date as the effective date for the voterfile that is part of the SQList database.

has 28 fields in it, one of which is named “countyId,” which I understand to be an elision of “county identifier.” For the six aforementioned registered voters, this field is zero and thus erroneous.

41 Outside of the six problematic registered voters, all other registered voters in the 2014 voterfile have “countyId” values of between one and 159, reflecting the fact that Georgia consists of 159 counties. I drop the six individuals who have no county identifier from the report’s analysis and thus say from this point onward that the 2014 voterfile contains 6,053,385 total registered voters. None of the conclusions in this report depend qualitatively on the six dropped registered voters whose county codes in the 2014 voterfile are invalid.

42 Beyond specifying county, the “Voters” table that makes up my 2014 Georgia voterfile contains *inter alia* registered voter names, addresses, and dates of birth. These data fields are found in Georgia voterfiles. However, the table does *not* include a variable for registered voter race, and this explains why I wrote, above, that the 2014 voterfile used in this report is a subset of the actual 2014 Georgia voterfile. In an upcoming section of this report, I return to the implications of the fact that registered voter race is missing from my 2014 voterfile. To the best of my knowledge, the State has not produced via discovery a complete 2014 Georgia voterfile.

43 Beyond the “Voters” table in the 2014 SQLite database, the second table from this database that I use in this report is titled “Consolidations.” This table contains precinct and polling place information. Of the table’s rows, 2,531 are associated with polling places that have valid county identification numbers. And, 2,516 of the rows in “Consolidations” have unique addresses. To the best of my knowledge, this implies that some Georgia precincts in 2014 shared polling places.¹²

44 The “Consolidations” table in the SQLite database contains a data field called “consolidationID,” which I understand to be an elision of “consolidation identifier.” This field also appears in the “Voters” table. Using the presence of “consolidationID” in both the “Voters” table and the “Consolidations” table, I merge polling place details from the latter table into the former.¹³ By polling place details, I mean the name of each associated precinct and its physical street address in Georgia.¹⁴ Based on this merge, I can identify the polling place for every registered Georgia voter who appears

¹²For example, there are two precincts in “Consolidations” whose polling place is 103 Broad Street N, Abbeville GA 31001. To the best of my understanding, these precincts are named, “Abbeville North 2” and “Abbeville North 5.” While these two precincts use the same physical voting place, they have different identifying numbers in the “Consolidations” table, 156005 and 156011, respectively. The “Consolidations” table lists two different polling names for these places, “COURTHOUSE 2A” and “COURTHOUSE 5A,” respectively. Even if these denote separate rooms or other spaces in 103 Broad Street, I treat them as have identical places insofar as they have the same street address.

¹³The “consolidationID” field in the “Consolidations” table contains 3,094 unique entries, which is consistent with the 3,094 rows in the table. I verified that every consolidationID in the “Voters” table appears in the “Consolidations” table.

¹⁴Precinct names and polling places are contained in the following three fields in the Consolidations table: “pollName,” “pollAddress,” and “pollCityStateZip.”

in the 2014 voterfile.

45 I hired a research assistant to geolocate the 6,053,385 registered voters in Georgia as of the 2014 General Election. By this I mean that I requested that my assistant determine the latitude and longitude of each voter's residential address that appears in the 2014 voterfile. This geoplace exercise was succesful for approximately 99.13 percent of Georgia's 6,053,385 registered voters in 2014.¹⁵

46 Based on voters' latitudes and longitudes, I can infer which census block group almost every 2014 registered voter in Georgia was located in. By "almost every," I mean approximately 99.13 percent. Below I discuss census block groups and how I use them in this report. For the moment, though, it is sufficient to note that a census block group is a geographical unit that is used by the United States Census Bureau. The intention of the geoplace exercise I mentioned above is to use residential address data in the 2014 voterfile to determine the census block group in which each registered voter in Georgia lived as of the effective date of the 2014 voterfile.

¹⁵My research assistant used ESRI ArcMap to geolocate registered voter addresses in Georgia. An address can be difficult to geolocate in the presence of street or address changes or if there is disagreement between the Census Bureau, the United States Postal Service, and surveyors as to where a particular address is truly located. For example, the town of Pearson, Georgia, contains a street named "Cody Bazemore Lane." The United States Postal Service recognizes this street name. However, ESRI ArcMap and Google Maps do not, the latter thinking that the street name is actually "Robert D. Bazemore Lane."

4.1.3 The 2016 Georgia voterfile

47 I now turn to the 2016 Georgia voterfile that I use in this report.

48 The 2016 voterfile used here is contained in a text file that, to the best of my knowledge, was created by the Georgia Secretary of State. This file is pipe-delimited, meaning that its fields are separated by the pipe symbol (`|`). This is a standard format for a text-based data file. The 2016 Georgia voterfile lists 6,653,011 registered voters.

49 For reasons that will be clear shortly, I use the 2016 voterfile only for the purpose of identifying the races of the registered voters who are listed in it. Registered voter race codes consist of short (one or two letter) abbreviations that specify the self-designated races of all of the registered voters in the 2016 voterfile. This voterfile has 351 erroneous race codes.

4.1.4 The 2018 Georgia voterfile

50 I now turn to the 2018 Georgia voterfile that I use in this report.

51 The 2018 voterfile used here, like the aforementioned 2016 voterfile, is contained in a text file that, to the best of my knowledge, was created by the Georgia Secretary of State. This file is pipe-delimited like its 2016 counterpart and lists 6,928,150 registered voters. Of those, none has an erroneous county code, and 18 have erroneous race codes.

52 There are 63 fields in the 2018 voterfile, one of which is voter race.¹⁶ As noted above, there are 18 registered voters in the 2018 voterfile whose race fields contain erroneous codes.¹⁷ When in this report I discuss the racial breakdown of Georgia registered voters in 2018, I disregard these 18 individuals. This small set of registered voters is minuscule compared to the 6,928,150 registered voters in the 2018 voterfile.

Table 1: Distribution of race among registered voters in the 2018 Georgia voterfile

Race	Count	Percent
White	3,731,324	53.86
Black	2,068,437	29.86
Unknown	680,117	9.82
Hispanic	200,698	2.90
Asian/Pacific Islander	147,260	2.13
Other	91,299	1.32
American Indian/Alaskan	8,997	0.13
Total	6,928,132	100.00

53 Table 1 describes the distribution of registered voter race in the 2018 Georgia voterfile. The rows are sorted by size of racial group, and it is clear that white registered voters make up the majority (approximately 54

¹⁶There are actually two fields in the 2018 voterfile that describe registered voter race, but these fields are redundant. One such field, named “race,” consists of two-letter race group abbreviations, i.e., “AI” and “WH.” The second field, named “race_desc,” consists of expansions of these abbreviations, i.e., “American Indian or Alaskan Native” and “White not of Hispanic Origin,” respectively.

¹⁷In particular, the “race” field for these 18 registered voters is “F” (11 cases) and “M” (seven cases). I suspect, but do not know, that these represents gender codes (“F” for female and “M” for male) that are erroneously placed in race fields. In the 18 cases of interest here, the field “race_desc” is also erroneous insofar as this field for the 18 cases contains a date as opposed to a race group description.

percent) of registered voters in Georgia. The next largest group is black registered voters (approximately 30 percent), following by registered voters with unknown races (approximately 10 percent). Beyond black and white registered voters, no other race group in Georgia makes up more than three percent of the total Georgia registered voter pool.¹⁸

4.2 Voter history files

54 The Georgia Secretary of State maintains lists of registered voters who participated in elections in Georgia. These lists, which are publicly available, are contained in what are known as *voter history files*.¹⁹

55 A voter history file for a given election consists of a set of voter registration numbers, each of which is associated with a registered Georgia voter who cast a ballot in said election. Voter history files also indicate how—on election day or absentee—each voter cast his or her ballot.

56 For the purposes of this report, I downloaded voter history files for the 2014 and 2018 General Elections.²⁰ Using the fact that Georgia voter

¹⁸Table 1 does not report confidence intervals for the percentages in it (the rightmost column of the table). This is because the table contains results from the complete 2018 Georgia voterfile. The 2018 voterfile does not consist of a sample of registered voters in Georgia as of its effective date, October 15, 2018; the file contains literally the universe of these individuals.

¹⁹*Elections Division Voter History Files*, Georgia Secretary of State, available at <https://elections.sos.ga.gov/Elections/voterhistory.do> (last accessed February 16, 2020).

²⁰The source for the history files is noted in fn. 4. The names of the 2014 and 2018 files that I downloaded are “31979.TXT” and “34147.TXT,” respectively.

history files and voterfiles are indexed by voter registration numbers, each of which corresponds to a unique registered voter in Georgia, I merged election turnout data from the 2014 and 2018 voter history files into my 2014 and 2018 voterfiles, respectively. From this merge, I can determine which registered voters in the 2014 and 2018 voterfiles voted in the 2014 and 2018 General Elections, respectively, as well as whether each individual voted on election day.

4.3 Georgia polling places used in 2018

57 I have already described how the SQLite database from which I generated my 2014 voterfile also contains information about precincts used in the 2014 General Election. I noted this when discussing two tables (“Voters” and “Consolidations”) that are part of the database.

58 Through discovery in this litigation, the State provided an SQLite database for the 2018 General Election.²¹ The format of the 2018 SQLite database is essentially equivalent to that of the 2014 SQLite database that I discussed above.

59 In particular, the 2018 SQLite database contains 12 tables, among them a table listing registered voters (“Voters”) and a table with polling place information (“Consolidations”). The “Voters” table contains a field called

²¹This database is named, “STATE-DEFENDANTS-00089548.DB3,” and it was provided to me by plaintiffs’ Counsel.

“consolidationID,” and this field can be used to associate each registered voter in “Voters” with his or her polling place in the 2018 General Election.

60 Using voter registration numbers, which appear in my 2018 voterfile and in the 2018 “Voters” table that is part of the 2018 SQLite database provided by the State, I merged each registered voter’s “ConsolidationID” into the 2018 voterfile. Then, using “ConsolidationsID,” I merged polling place details from the “Consolidations” table into the voterfile.

61 There are 10,080 registered voters in my 2018 voterfile who do not appear in the 2018 “Voters” table. For this set of individuals (approximately 0.15 percent of the overall voterfile), I do not have polling place details.

4.4 Census data

62 I have thus far described sources of data on Georgia registered voters and where they voted on election day in the 2014 and 2018 General Elections. In my analysis, below, of these voters, I also draw on data from the American Community Survey (ACS), a product of the United States Census Bureau.²² In particular, I use the 2010-2014 ACS to characterize the citizen voting age population (CVAP) of block groups in Georgia.²³ In my discussion of the

²²On the ACS, see the Census Bureau description at <https://www.census.gov/programs-surveys/acs> (last accessed February 8, 2020).

²³*Citizen Voting Age by Race and Ethnicity 2010-2014*, United States Census Bureau (February 1, 2016), available at <https://www.census.gov/data/datasets/2014/dec/rdo/2014-cvap.html> (last accessed February 8, 2020).

2014 voterfile, I noted that a census block group is a geographical unit used by the census.²⁴ There are 5,533 block groups in Georgia, and together these units partition the state geographically. This means that they are exclusive (do not overlap) and exhaustive (together they cover all of Georgia).

63 Census block groups are the second smallest geographical units for which the census reports results. The reason that this report uses block groups as opposed to blocks, which are smaller, is because the ACS does not include CVAP data at the block level.

4.5 Identifying polling places that closed in Georgia between 2014 and 2018

64 I now describe how I determine which polling places in Georgia closed between the 2014 and 2018 General Elections. I include such a discussion in the data section of this report as it reflects data manipulations. To preview what follows, I identify closed polling places in Georgia by assessing the extent to which the physical addresses of polling places used in the 2014 General Election were also used in the 2018 General Election.

65 If a given registered voter's polling place was closed between the 2014 and 2018 General Elections, this means that said registered voter was assigned to a new polling place as of November 2018.

²⁴For the hierarchy of census geographical units, see <https://www2.census.gov/geo/pdfs/reference/geodiagram.pdf> (last accessed February 8, 2020).

66 It is important to distinguish a precinct (a geographical unit) from its associated polling place, and this because multiple precincts can in principle use a single polling place. Earlier I noted that to the best of my understanding, in the 2014 General Election, there were 2,531 precincts in Georgia but only 2,516 polling places (note that 2,516 is 15 fewer than 2,531). This appears to be indicative of some precincts sharing polling places. I noted above that in the 2018 General Election there were also fewer polling places than there were precincts.

67 The two “Consolidations” tables that I have previously discussed include polling place addresses (the variable name in “Consolidations” is “pollAddress”). These addresses are for the most part unique across counties; when they are not unique (e.g., four polling places in 2014 have an address of “000 MAIN STREET,” I add county names to said addresses. Then, I say that a polling place in 2014 closed prior to 2018 if its address was used in 2014 but not in 2018.

68 There are various inconsistencies and minor errors in the 2014 and 2018 polling place address lists that I extracted from the 2014 and 2018 State-provided SQLite databases. For example, the Welcome Community Center, used as a polling place in 2014 and in 2018, is located at 1792 Welcome Rd, Newnan, GA 30263.²⁵ However, in the 2014 “Consolidations” table,

²⁵For this address, see <https://www.facebook.com/pages/Welcome-Community-Center/757936997574418> (last accessed February 17, 2020).

this address appears as *1972* Welcome Rd. I presume that this reflects a transposition of digits in a street address as opposed to a polling place that moved.

69 Another example of inconsistent addresses across 2014 and 2018 lists of polling places is a fire station used in 2014 and 2018 as a polling place in Ludowici, GA 31316. Per the 2018 SQLite database, this fire station is located at 3218 Marcus Nobles Highway. Per the 2014 database, however, the polling place is located at 000 Marcus Nobles Highway.

70 A third example of inconsistent addresses is as follows. In the 2014 General Election, there was a polling place at 101 Barr *Road*, Bowdon, GA 30108. However, in 2018, there was a polling place at 101 Barr *Avenue*, Bowdon, GA 30108. Despite this minor inconsistency in street addresses in 2014 and 2018, I assume that these two polling places are actually located at the same place.

71 I attempted to correct as many errors like the above as I could. In many cases, I was able to identify and resolve polling place address discrepancies by comparing polling places that had identical names in 2014 and 2018 yet different addresses. The name of each polling place can be found in the variable called “pollName” in the 2014 and 2018 “Consolidations” tables.²⁶

²⁶In some cases, I found errors in polling place addresses that were consistent across time. For example, the Rome Civic Center is a polling location in Rome, GA. Its street address is 400 Civic Center *Drive*. In both the 2014 and 2018 “Consolidations” tables,

72 Before comparing polling place addresses to determine which 2014 places closed prior to the 2018 General Election, I removed all punctuation marks from the 2014 and 2018 polling place addresses that I have. The reason that I did this is because, among other things, I did not want inconsistencies in the use of periods to lead me to think that two polling places that in reality are in the same place are actually different. For example, one could reasonably refer to Georgia Highway 125 as “GA HWY 125” or “GA HWY. 125”

73 I note that the polling place data that I have includes some places with missing zip codes in the “Consolidations” field named “pollCityStateZip.” These missing zip codes are not problematic for me because I do not compare polling place zip codes in the 2014 and 2018 General Election.

74 Henceforth, when I state that a given Georgia polling place closed between the 2014 and 2018 General Elections, this means that the address for the polling place used in 2014 does not appear in the list of polling place addresses from 2018.

75 My method of determining which polling places closed in Georgia between 2014 and 2018 does not depend on comparing official polling place or precinct identifiers across these years. In my professional experience as a

this address is listed as 400 Civic Center *Dive*. Errors that are consistent across time do not cause problems in comparing polling place addresses in 2014 and those in 2018.

scholar of election administration, county election officials sometimes renumber polling places and precincts without necessarily adjusting them. If, say, a Georgia county were to have renumbered its precincts between 2014 and 2018 but not closed any associated polling places in this time period, my method for identifying closed polling places would not erroneously conclude otherwise.

4.6 Identifying Georgia registered voters who did not move between 2014 and 2018

76 Earlier I noted that Georgia voterfiles contain unique voter registration numbers. I merge my 2014 and 2018 voterfiles using these numbers.

77 Such a merging exercise allows me to assess if any registered voters in Georgia moved within the state between the 2014 and 2018 General Elections. To do this, I create an overall address field for each registered voter in my 2014 and in 2018 voterfiles by concatenating each voter's street address, city, and five digit zip code. After concatenating voter addresses, I remove spaces, ensure that all address characters are lower case, and remove punctuation marks as well.

78 For example, suppose that a registered Georgia voter lived at 206 Washington St. SW, Atlanta, GA 30334. This individual would have an address string of, "206washingtonstswatlanta30334."

79 I then assume that a Georgia registered voter whose concatenated address in 2014 is the same as his or her concatenated address in 2018 did not move between these two years. I similarly assume that registered voters whose address fields differed between 2014 and 2018 moved between these years.

80 My use of concatenated address fields in 2014 and 2018 has two minor limitations. First, my asserting that a difference between a registered voter's overall address in the 2014 and 2018 voterfiles implies that said registered voter moved within Georgia between 2014 and 2018 may not capture the true extent to which such a voter moved in this time frame. This is because I cannot count how many times a voter whose address changed between 2014 and 2018 actually moved in this time period. A registered voter who moved twice between 2014 and 2018 would from my perspective appear the same as a registered voter who moved only once in this period.

81 Second, if a registered voter moved within Georgia between 2014 and 2018 and, prior to 2018, moved back to the exact same address from which he or she started, I would classify this individual as a non-mover even though the individual in fact had moved twice between 2014 and 2018.

82 To the extent that these two issues affect my characterizations of registered Georgia voters who moved within Georgia between 2014 and 2018, they will cause me to understate the extent of registered voter movers in the

state.

83 Lastly, I cannot use my address comparison method for counting moving registered voters to enumerate registrants who moved out of Georgia between 2014 and 2018. This is because the 2018 Georgia voterfile lists only voters who were registered in Georgia itself.

84 Of the 5,245,872 registered voters who appear in both the 2014 and 2018 Georgia voterfiles, I find that 1,625,661 (approximately 30.1 percent) moved between these two years.

4.7 Data limitations and underestimates of the extent to which black registered voters were affected by 2014-2018 polling place changes in Georgia

85 The data sources that this report brings to bear on the relationship between race and polling place changes made in Georgia between 2014 and 2018 are valuable. However, like all data sources used to investigate an aspect of election administration, they have limitations.

86 In this section of the report I discuss two data limitations. First, I comment on the implications of the fact that I do not have access to a 2012 Georgia voterfile. Second, I describe the consequences of the fact that the 2014 voterfile used in the report does not contain a field that describes the

race of each registered voters in Georgia.

4.7.1 Lack of a 2012 Georgia voterfile

87 To the best of my knowledge, the defendants in this litigation have not produced a 2012 Georgia voterfile during discovery.

88 My lack of access to a 2012 voterfile means that the results in this report cannot engage the full extent of polling place changes that have occurred in Georgia since *Shelby County*. This Supreme Court decision was handed down on June 25, 2013, and the effective date of the 2014 voterfile used here is October 24, 2014. Polling place changes promulgated in Georgia between these two dates are thus beyond the scope of this report.

89 Although I do not have direct evidence on the extent of polling place changes in Georgia prior to the effective date of the aforementioned 2014 voterfile, I have indirect evidence that some polling places in the state were indeed changed between the 2012 General Election and October 24, 2014. Here I provide evidence from two Georgia counties, Warren and Forsyth.

90 Per my 2014 voterfile, Warren County had one polling place in the 2014 General Election, located at 48 Warren St., Warrenton GA 30828. This county is approximately 60 percent black and had 5,436 resident as of 2018.²⁷ However, according to a September 2019 report titled, “Democracy

²⁷For these details on Warren County, which come from the 2018 American Community Survey, five year estimates, see <https://data.census.gov/cedsci/table?q=>

Diverted,” issued by the Leadership Conference Education Fund, Warren County closed 83 percent of its polling places between 2012 and 2018 (p. 64). This statement can hold only if Warren County polling places were closed between the 2012 General Election, which the aforementioned report used as a baseline for its analysis of precinct and polling place changes in Georgia, and the 2014 General Election.²⁸

91 Regarding Forsyth County, this is another Georgia county that adjusted its precincts and polling places between 2012 and the 2014 General Election. Forsyth County was approximately four percent black with 236,612 residents as of 2018.²⁹ In the period leading up to the 2014 General Election, the county’s Board of Voter Registration and Elections reduced its number of precincts from 25 to 16.³⁰

warren%20county%20Georgia%20demographics&g=0500000US13301&tid=ACSDP5Y2018.DP05(last accessed February 18, 2020).

²⁸ *Democracy Diverted*, Leadership Conference Education Fund (September 2019), available at <http://civilrightsdocs.info/pdf/reports/Democracy-Diverted.pdf> (last accessed February 12, 2020).

²⁹ For these details on Forsyth County, which come from the 2018 American Community Survey, five year estimates, see <https://data.census.gov/cedsci/table?q=forsyth%20county%20Georgia%20demographics&g=0500000US13117&tid=ACSDP1Y2018.DP05>(last accessed February 18, 2020).

³⁰ *Election Summary Report*, Forsyth County, State of Georgia (November 6, 2012), available at https://www.forsythco.com/Portals/0/Documents/Voter/ElectionResults/2012_11_06/GEMS%20ELECTION%20SUMMARY%20REPORT.pdf(last accessed February 18, 2020) and *Election Summary Report*, Forsyth County, State of Georgia (November 4, 2014), available at https://www.forsythco.com/Portals/0/Documents/Voter/ElectionResults/2014_11_04/11.4.14%20GEMS%20ELECTION%20SUMMARY%20REPORT.pdf(last accessed February 18, 2020. See as well Brande Poulnot, *Forsyth County’s Proposed Voting Precinct Changes Set To Be Decided Nov. 4*, The Patch (October 15, 2013), available at <https://patch.com/georgia/cumming/forsyth-countys-proposed-voting-precinct-changes-set-to-be-decided-nov-4> (last accessed February 16, 2020).

92 Without a 2012 voterfile or another source of information that describes Georgia's polling places as of November 2012, I cannot comment on the extent of precinct changes in Georgia that predate this report. Regardless, to the extent that there were any, it follows that my report's results on the consequences of the polling place changes in Georgia that occurred between 2014 and 2018 underestimate the consequences in Georgia wrought by these types of changes since 2012.

4.7.2 Lack of individual race details in the 2014 voterfile

93 I noted earlier that my 2014 voterfile lacks a field for registered voter race. Insofar as I need to know information about the races of registered voters in Georgia as of the 2014 General Election in order to assess the extent to which polling place changes in Georgia after 2014 were racially neutral, I deal with this lacuna in two distinct ways.

94 *Racially homogeneous census block groups.* Some registered voters in 2014 resided in census block groups that were racially homogeneous, or almost racially homogeneous, with respect to citizen voting age population. If, for example, a 2014 registered voter's address placed her in a census block group whose citizen voting age population was 100 percent black, then it follows that this registered voter is also black. I can infer this even though the 2014 voterfile that I use here lacks a race field. A similar statement applies to a registered voter who lived in 2014 in a racially homogeneous

white census block group; such a registered voter must be white.

95 This logic leads to a homogeneous census block group analysis wherein I focus on registered voters who live in census block groups in Georgia that are at least 95 percent black or at least 95 percent white.

96 The advantage of such an analysis is that it alleviates the problems caused by the fact that the 2014 voterfile lacks a race field. The disadvantage of this approach, however, is that it allows consideration only of places in Georgia that are almost all black or almost all white.

97 *Linking 2014, 2016, and 2018 voter registration records.* Another approach to dealing with the lack of a race field in the 2014 voterfile is to use race information for Georgia registered voters that is contained in the 2016 and 2018 voterfiles. This approach covers more registered voters in 2014 than the homogeneous census block group approach described above, but, as I explain below, it comes at a cost of selecting against black registered voters.

98 When linking the 2014, 2016, and 2018 voterfiles, I transfer race data for registrants in the 2014 file from the 2016 and 2018 voterfiles. This is not problematic for registered voters in Georgia who appear in the 2014 voterfile and then either in the 2016 or 2018 voterfiles (or in both). However, registrants who appear in the 2014 voterfile, but in neither the 2016 nor the 2018 voterfile, cannot be considered in analyses that link the 2014, 2016, and

2018 voterfiles.

99 There are 6,053,385 registered voters in the 2014 voterfile. Using the common registration number field to link the 2014, 2016, and 2018 Georgia voterfiles, I transfer race details from the 2016 file into the 2014 file. This characterizes the races of 5,892,947 registered voters. I find an additional 8,113 registered voters in the 2014 voterfile whose registration numbers do not appear in the 2016 voter file but do appear in the 2018 voterfile. For this group, I transfer race information to 2014 from the 2018 voterfile.

100 When this exercise is complete, I have race information on all 6,053,385 registered voters in the 2014 voterfile except for 152,325 (approximately 2.52 percent).

101 A set of 152,325 registered voters is substantial, and this particular set is most likely not representative with respect to race of all 2014 Georgia registered voters. This is because the set of registered voters in Georgia who were registered in 2014 and then later in either 2016 or 2018 (and thus appear in both the 2014 and in either the 2016 and/or 2018 voterfiles) selects against movers. This means that movers will be disproportionately unrepresented (and non-movers disproportionately represented) among registered voters in Georgia who were registered in both 2014 and then in 2016 and/or 2018. The set of registered voters in Georgia who were registered in both 2014 and then again in 2016 and/or 2018 also selects against registered voters who passed

away between 2014 and 2018.

102 Any set of registered voters that selects against movers is problematic because black individuals on average move more frequently than white individuals.³¹ Therefore, on account of moving propensity, black registered voters as of 2014 are disproportionately less likely compared to white registered voters to be part of a collection of registered voters in Georgia who were registered in 2014 and later in 2016 and/or 2018. Put another way, there are fewer black registered voters in my sample of registered voters who were registered in 2014 and later in 2016 and/or 2018 than there should be.

103 Accordingly, any analysis in this report that uses 2016 and 2018 race data in place of 2014 race data selects against black registered voters.³²

104 As I explain later in this report in the context of specific analyses, this presumably leads to *underestimates* of the relationship between race and polling place changes in Georgia in the period 2014 and 2018. Thus, to the extent that my analyses using 2016 and 2018 race data in 2014 conclude that these changes were not racially neutral, these conclusions are conservative.

³¹*Americans Moving at Historically Low Rates*, United States Census Bureau (November 16, 2016), available at <https://www.census.gov/newsroom/press-releases/2016/cb16-189.html> (last accessed February 10, 2020).

³²This point is not obviated by the argument that an individual in the 2014 voterfile, but in neither the 2016 nor 2018 voterfiles, was not a registered voter in 2016 and 2018 and thus cannot have had his or her polling place changed between 2014 and 2018. A full assessment of the racial neutrality (or lack thereof) of polling place changes carried out in Georgia between 2014 and 2018 requires the races of all registered voters who, by virtue of being registered to vote in 2014, were vulnerable to such changes.

To the extent that polling place changes in Georgia in the time frame 2014 and 2018 were not racially neutral and in fact affected black registered voters more than white registered voters, the true extent of such non-neutrality is equal to or greater than what I find in this report.

5 Assessing the racial neutrality of polling place changes in Georgia, 2014 to 2018

105 In this section of my report, I describe this report's results on the extent to which polling places changes in Georgia in the time period 2014 to 2018 were racially neutral. This section consists of four parts.

106 First, I provide some basic counts of closed polling places in Georgia, 2014 to 2018, and show that polling place closure rates varied across Georgia.

107 Second, I assess in three ways the extent to which polling place closures in Georgia in the time period 2014 to 2018 were racially neutral. These ways consist of an analysis of racially homogeneous census block groups in Georgia; an analysis which links the 2014, 2016, and 2018 voterfiles; and, an analysis of majority black polling places in Georgia. The conclusions of these three approaches to the question of racial neutral of polling place closures in Georgia in the time period 2014 to 2018 are qualitatively identical: black registered voters in Georgia were disproportionately affected by the

polling place changes in Georgia that occurred between 2014 and 2018.

108 Third, I consider the set of registered voters in Georgia who received new polling places in 2018 compared to 2014. This set of individuals is more numerous than those whose polling places closed in this time frame, and this is because a registered voter in Georgia could have been assigned between 2014 to 2018 to a new polling place even if this voter's polling place in 2014 did not close. This leads me to enumerate the set of registered voters in Georgia who received new polling places sometime between 2014 and 2018, and based on this enumeration I assess whether the process that produced new polling place assignments among registered Georgia voters was racially neutral. I find that it was not, and this conclusion is qualitatively identical to the conclusions, broadly construed, of my assessment of polling closures alone.

109 Fourth, I examine voter turnout rates in the 2018 General Election in Georgia and in particular compare turnout rates among registered Georgians who received a new polling place between 2014 and 2018 and those who did not. I carry out this analysis because it addresses possible downstream effects of the polling place changes made in Georgia between 2014 and 2018. I find evidence that registered voters in Georgia who received new polling places in the period 2014 to 2018 were less likely to vote in 2018, and in particular less likely to vote on election day, compared to registered voters in Georgia who did not receive new polling places in the period 2014 to 2018.

5.1 Identifying polling place closures in Georgia between 2014 to 2018

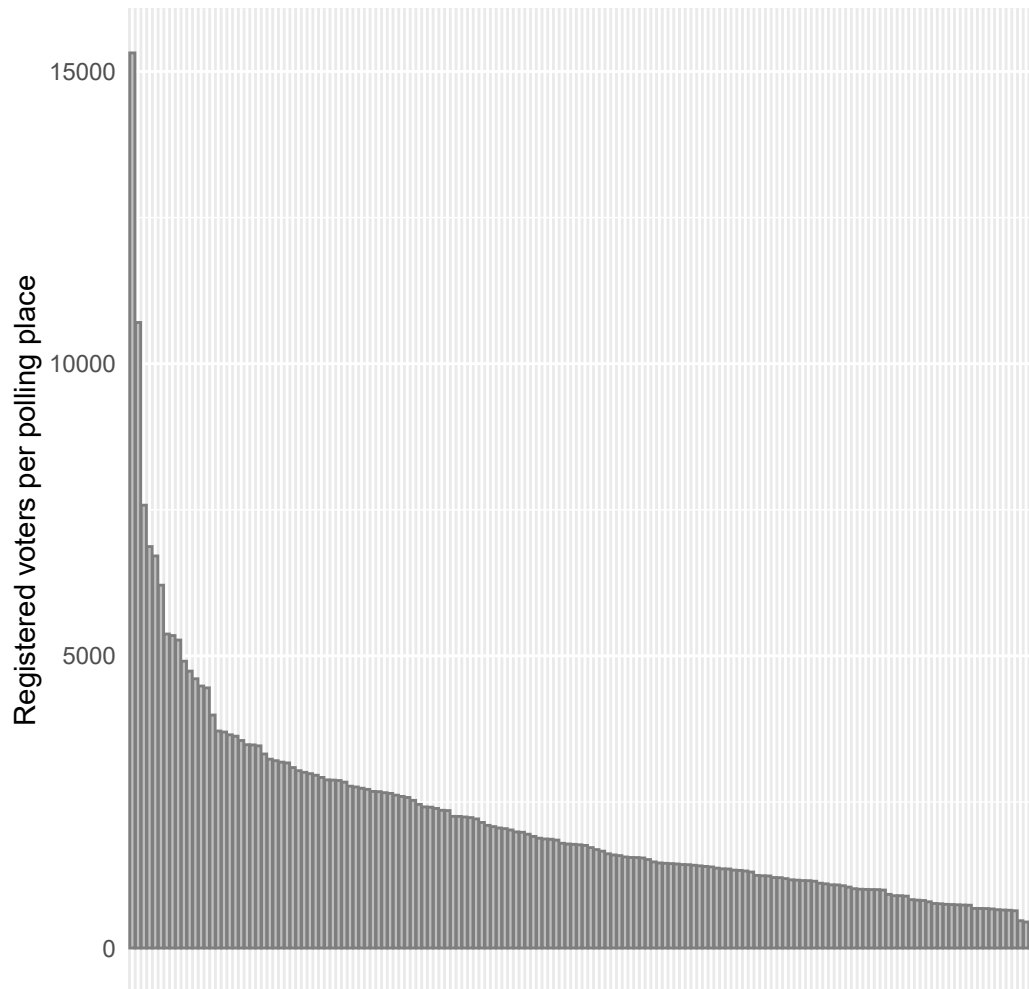
110 There were 2,516 polling places in Georgia in the 2014 General Election and 2,349 such places in the 2018 General Election. The difference between these two numbers is *not* the number of polling place closures between 2014 and 2018, and this is because the total count of Georgia polling places in 2018 includes places that were added between the 2014 and 2018 General Elections.

111 Before detailing polling place closures in Georgia *per se*, I note that the state's 159 counties varied in the extent that they contained polling places in 2014. This is evident in Figure 1, which is a barplot with 159 bars, one per Georgia county. The height of each bar is the ratio of a county's total registered voter pool in 2014 divided by the number of polling places in the county.

112 The tallest bar in Figure 1 is associated with Stephens County. As of 2018, this county had 25,676 total residents and one polling place. The second tallest bar is Rabun County, which as of 2018 had 16,457 residents and one polling place.³³ To the extent that Georgia's polling places are a

³³The demographics for Stephens County and Rabun County are from the 2018 American Community Survey, five year estimates, available at https://data.census.gov/cedsci/table?q=Stephens%20county%20Georgia%20demographics&g=0500000US13257&tid=ACSDP5Y2018.DP05&layer=county&vintage=2018&cid=DP05_0001E and https://data.census.gov/cedsci/table?q=Rabun%20County%20Georgia%20demographics&g=0500000US13257&tid=ACSDP5Y2018.DP05&layer=county&vintage=2018&cid=DP05_0001E

Figure 1: Registered voters per polling place in 2014, by county



Note: each bar in the figure represents one Georgia county.

form of resources available to the state's registered voters, Figure 1 shows that there was variability across Georgia in the availability of these resources

20demographics&g=0500000US13241&hidePreview=false&tid=ACSDP5Y2018.DP05&layer=county&cid=DP05_0001E&vintage=2018(last accessed February 16, 2020).

in 2014, that is, at the start of the time period analyzed in this report.

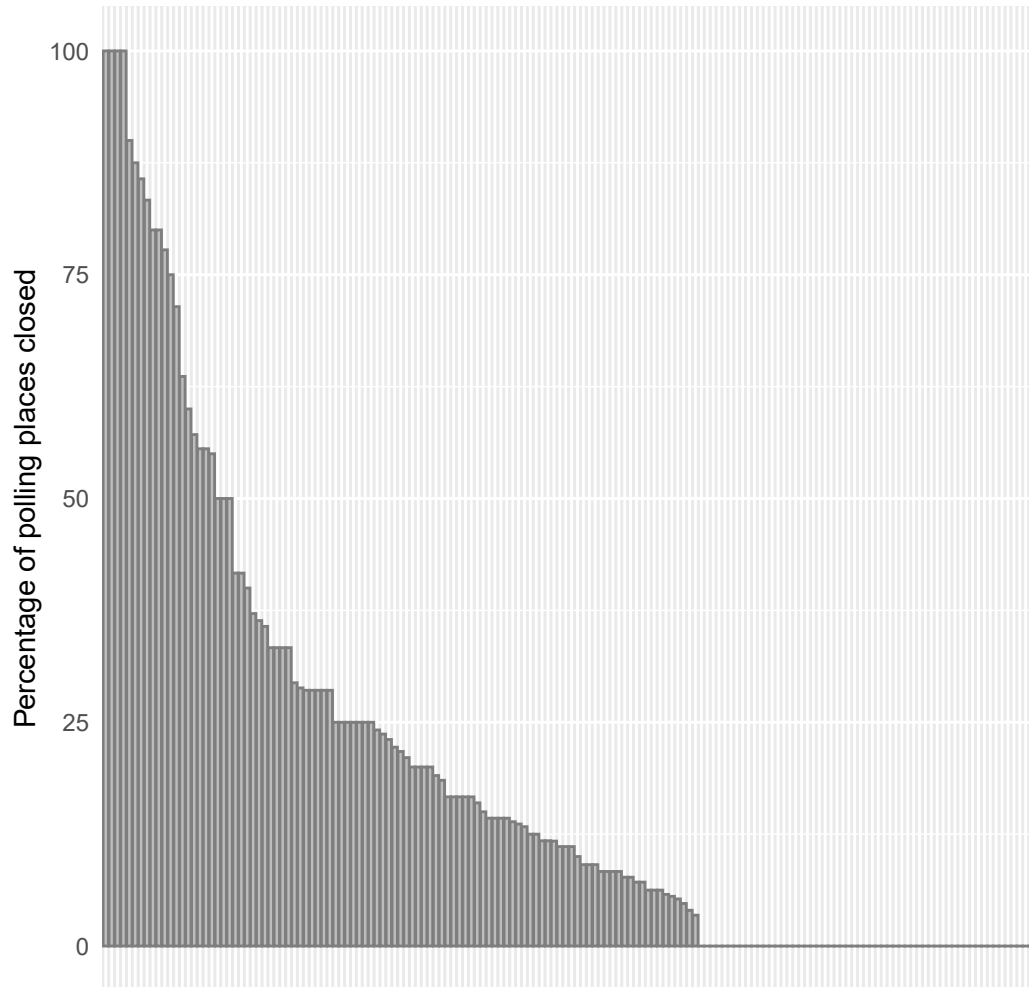
113 I assembled a list containing the polling places that appeared in the 2014 voterfile but did not appear in the 2018 voterfile. This lists contains 459 polling places, and this is the total number of polling places that, to the best of my knowledge, closed in Georgia between the 2014 and 2018 General Elections.

114 The rate of polling place closure by county varied across Georgia. This is depicted in Figure 2, which is a bar plot with 105 bars. The height of each bar describes the percentage of a county's precincts whose polling places closed between 2014 and 2018, and it is evident in this figure that four counties in Georgia closed all (100 percent) of their 2014 polling places. This does not mean, of course, that voters in these counties had nowhere to vote on election day in 2018. Rather, this finding means that every registered voter in these four counties had a new place to vote on election day in 2018 compared to where he or she voted on election day in 2014.

115 I noted that there are 101 bars in Figure 2. Insofar as there are 159 counties in Georgia, it follows that 58 counties in the state did not close any polling places between the 2014 and 2018 General Elections.

116 Figure 2 shows percentages rather than raw numbers of polling places closed, and this is because Georgia counties varied in 2014 in the

Figure 2: Percentages of polling places closed, 2014 to 2018, by county

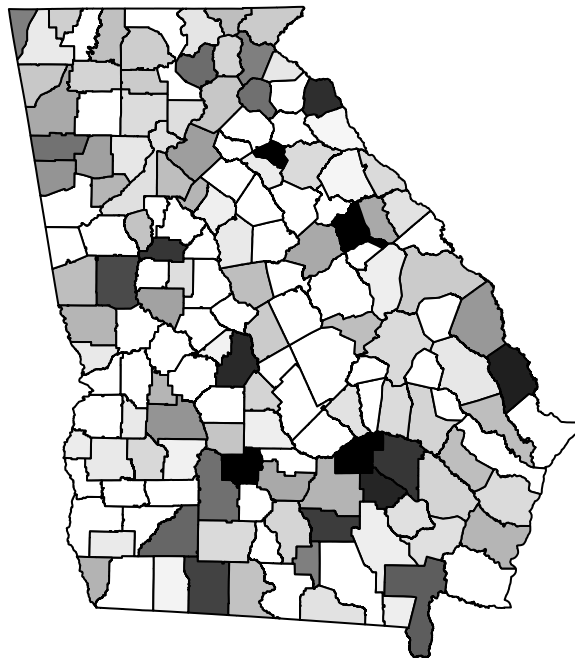


Note: each bar in the figure represents one Georgia county.

number of precincts that they had. If Figure 2 were to plot raw numbers of closed polling places, it would risk being confounded by the fact that more populous counties in Georgia may have more such closures simply because

they have more polling places in the first place.

Figure 3: Map of Georgia counties and percentages of precincts closed, 2014 to 2018



Note: county shading proportional to percentage of precincts closed.

117 Figure 3 shows the spatial distribution of polling place closure rates across Georgia. The darker a county in the map, the greater the closure percentage. In contrast, lightly shaded counties had low polling place closure percentages.

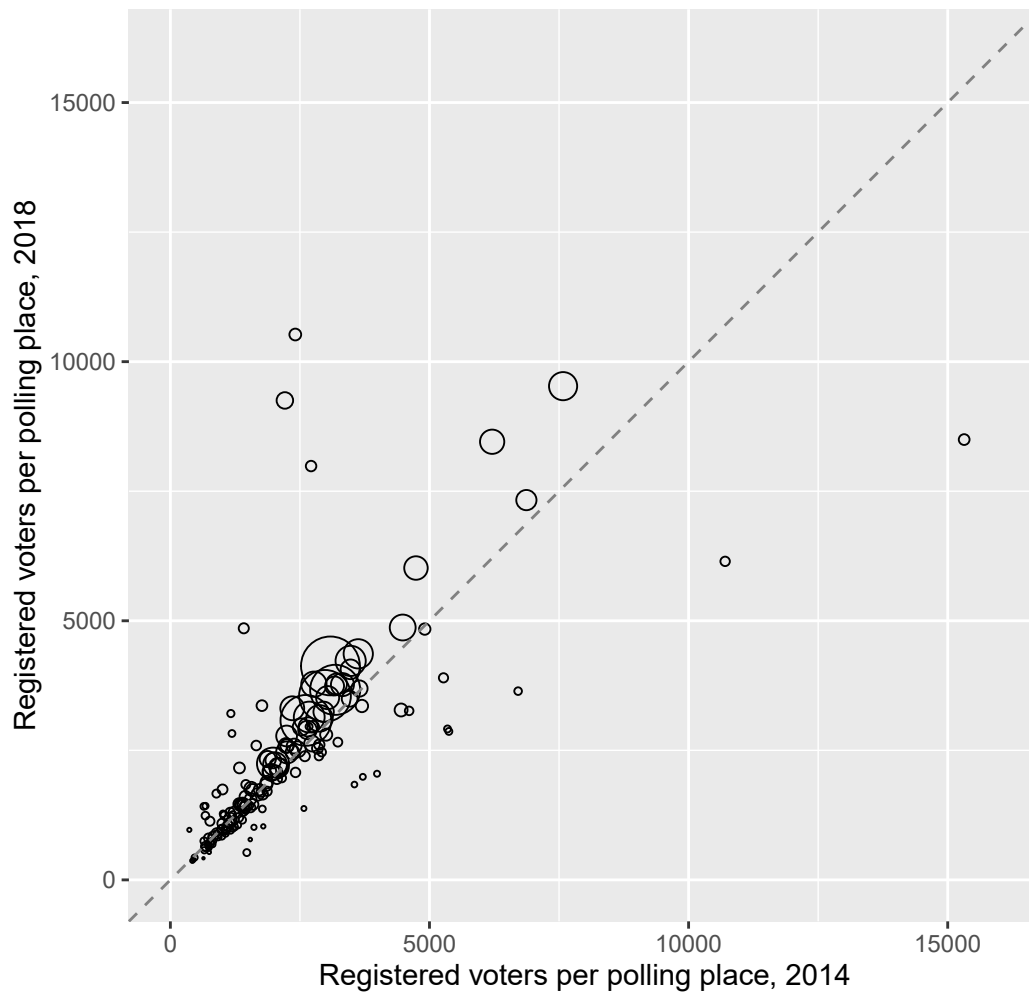
118 The implication of Figure 3 is that 2014-2018 polling place closure rates varied spatially. It is not the case, that is, that all geographic regions of Georgia had similar rates of polling place closure. This was evident in Figure 2's barplot as well.

119 The consequence of polling place closures across Georgia is that many counties had more registered voters per precinct address in 2018 than in 2014. This is shown in Figure 4.

120 In particular, Figure 4 plots by county registered voters per polling place for 2014 and for 2018, and the figure contains a dashed 45-degree line. Each point in the figure denotes a county, and there are 159 points in the figure. Each point is sized proportionally to the number of registered voters in the county in 2018. This is because larger counties are more meaningful statistically than smaller counties, all things equal.

121 County points that lie above the pictured dash line in Figure 4 had more registered voters per polling place in 2018 than in 2014. As the figure shows, most Georgia counties had more registered voters per polling place

Figure 4: Registered voters per polling place, 2014 to 2018, by county



Note: county points are sized in proportion to total registered voters in 2018

address in 2018 than in 2014. The exceptions to this rule are a set of sparsely populated counties whose points lie below the 45-degree line in Figure 4.

5.2 Polling place closures and race

122 In the overview of this report, I noted that the objective of this report is assessing whether polling place closures in Georgia between 2014 and 2018 were racially neutral. I turn to this matter now.

123 I have already written that the 2014 Georgia voterfile in this report does not contain a field for registered voter race, and this complicates my assessments of the extent to which polling place closures in the time period 2014-2018 were racially neutral. As described earlier, I offer two approaches to dealing with this matter.

5.2.1 Assessing the racial neutrality of polling place closures using racially homogeneous block groups

124 The analytical approach in this section of the report builds on the brief discussion of racially homogeneous census block groups that appeared earlier in this report. It proceeds as follows.

125 There are 69 census block groups in Georgia in which, based on the 2010-2014 American Community Survey, all citizens of voting age were black. There are similarly 112 census block groups in which all citizens of voting age were white. Any registered voter in Georgia who lives in a block group that is 100 percent black (white) must be black (white) himself or herself.

126 Similarly, if I consider a block group in Georgia that is 99 percent black (white) based on citizen voting age population, I can be almost certain that almost every registered voter in such a block is black (white).

127 Table 2 presents the rates of polling place closures for registered voters in Georgia who lived in racially homogeneous (or near homogeneous) block groups. It allows homogeneity to range from 100 percent down to 95 percent. This is apparent in the table row titled “Cutoff,” which ranges from 100 to 95.

Table 2: Polling place closure rates in racially homogeneous block groups

Cutoff	Blacks	Whites	Black closure rate	White closure rate	Difference
100	47,600	88,130	26.84	24.07	2.76
99	65,600	121,589	25.00	24.05	0.95
98	103,202	204,831	25.50	23.84	1.66
97	137,478	321,050	23.15	21.60	1.55
96	184,814	415,889	21.89	20.61	1.28
95	227,210	538,947	19.81	20.36	-0.55

128 Each row in Table 2 is associated with a given homogeneity cutoff. For a registered voter in 2014 to be included in the top row, the individual must have resided in 2014 in a completely (100 percent) homogeneous census block group. For a registered voter in 2014 to be included in the table’s second row, the individual must have lived in 2014 in a census block group that was at least 99 percent black or white. The other rows in Table 2 are characterized similarly.

129 The columns in Table 2 titled “Blacks” and “Whites” report the number of registered black and white voters, respectively, who in 2014 lived in racially homogeneous or near homogeneous census block groups. For example, 47,600 registered black voters in Georgia in 2014 lived in census block groups in which 100 percent of the citizen voting age population was black. The comparable white figure is 88,130 registered voters.

130 The column in table 2 named “Difference” reports the black-white difference in polling place closure rates, and the key finding in Table 2 is as follows: the black-white differences in the table are positive down to a homogeneity cutoff of 95 percent. This implies that, in areas of Georgia where we can be certain or reasonably certain of racial composition, black registered voters in 2014 had their polling places closed at greater rates than white registered voters. Indeed, among black registered voters and white registered voters in completely racially homogeneous census block groups, there is almost a three percentage point difference between black and white polling place closure rates.

5.2.2 Assessing the racial neutrality of polling place closures using race data from the 2016 and 2018 voterfiles

131 I now turn to my second approach at dealing with the fact that the 2014 voterfile lacks a race field. This approach uses race information from the 2016 and 2018 voterfiles in place of 2014 race data.

132 To recap my method that combines the 2014, 2016, and 2018 Georgia voterfiles, of the 6,053,385 registered voters in Georgia as of 2014, there are 5,901,060 (approximately 97.48 percent) who remained registered in 2016 and/or in 2018. I can determine this by comparing voter registration numbers in my 2014 voterfile with voter registration numbers in the 2016 and 2018 voterfiles. Insofar as the latter two voterfiles contain fields for race, I can use the data in these fields to characterize race as of 2014.

133 As alluded to earlier, this approach has limitations related to the fact that not all registered voters on the rolls in 2014 were also registered in 2016 and/or in 2018. The limitations are twofold. First, the approach misses approximately 2.52 percent of Georgia registered voters from 2014. Second, and this was discussed at some length earlier, it is based on individuals in Georgia who maintained their registration status in 2014 and later in 2016 and/or 2018. This selects against movers, which is correlated in the United States with voter registration.³⁴ Thus, analyzing only those 2014 Georgia registered voters who were also registered in later years in Georgia leads to a sample of individuals that is disproportionately non-moving. More broadly, any feature that leads an individual to register to vote and then to stay registered will be disproportionately present in a sample of 2014 Georgia registrants that is also registered in 2016 and/or 2018.

³⁴For example, see the April 2019 Census Bureau report, “Voting and Registration in the Election of November 2018,” Table 7, available at <https://www.census.gov/data/tables/time-series/demo/voting-and-registration/p20-583.html> (last accessed February 9, 2020).

134 Table 3 breaks down the 2014 voterfile by race group and closed polling place status. The largest racial group consists of which registered voters, of whom there are over three million. The rows in Table 3 are sorted by rate of polling place closure.

Table 3: Polling place closure rates by race

Race	Registered voters	Closed	Percent closed
White	3,382,774	564,248	16.68
Black	1,793,723	301,291	16.80
Unknown	440,377	79,856	18.13
Hispanic	121,369	19,727	16.25
Asian/Pacific Islander	93,003	12,410	13.34
Other	66,081	10,671	16.15
American Indian/Alaskan	3,385	519	15.33

135 Table 3 shows that the black polling place closure rate in 2014 (approximately 16.80 percent) is greater than the white polling place closure rate (approximately 16.68 percent). This yields a black-white difference of 0.12 percentage points. Like the earlier homogeneous census block group analysis, this analysis finds that black registered voters had polling place closure rates greater than white registered voters.

5.2.3 Black majority precincts and polling place changes

136 For another perspective on the polling place closures that took place in Georgie between 2014 and 2018, I classified each of the 2,516 polling places that were used in the 2014 General Election as having a black majority or

not. To carry out this classification exercise, I assume that a registered voter associated with a given polling place in 2014 is black if and only if this individual can be linked to a registration record of a black individual in 2016 or 2018.

137 My use of this method of classifying black registered voters means that I am selecting against black registered voters. I am confident that some black registered voters who appear in the 2014 voterfile cannot be linked with 2016 or 2018 registered voters because, for example they passed away or moved out of Georgia between 2014 and 2018. I treat these individuals as non-black, and this means that I am almost certainly classifying as white a collection of registered voters in 2014 who are actually black. My results in this section of the report thus understate the number of black majority polling places.

Table 4: Closures among black majority polling places

Black majority	Closed	Count
No	No	1,625
No	Yes	349
Yes	No	432
Yes	Yes	110

138 Table 4 reports the results of classifying the 2,516 polling places in use in Georgia in 2014 based on black registered voter majority status. The top two rows of Table 4 describe the 1,974 polling places that do not have

a black majority. The bottom two rows of Table 4 provide counts of polling places that have a black majority. There are 542 of these.

139 Table 5 in turn describes polling place closure rates by black majority status. In particular, the closure rate among non-black majority polling places is approximately 17.7 percent. In contrast, the closure rate among black majority polling places is approximately 20.3 percent.

Table 5: Closure rates in black majority polling places

Racial group	Polling places	Closure rate
Not black majority	1,974	17.68
Black majority	542	20.30

140 It thus follows from Table 5 that black majority polling place in 2014 were more likely to close than non-black majority precincts. The gap in closure rates between these two types of precincts is approximately 2.6 percentage points. This implies that polling place closures in Georgia in the period 2014 to 2018 were not racially neutral and in particular that such closures disproportionately affected black majority polling places in Georgia in the time period 2014 to 2018.

141 To ensure that the results in Table 5 are not dependent on my use of 50 percent as a potentially arbitrary threshold for characterizing black majority precincts, I repeated the calculations that support Tables 4 and 5 using 60 percent as a cutoff for a black supermajority district. Here, the

prefix “super” on “supermajority” denotes that the threshold for identifying a majority black district is greater than 50 percent. The result of this exercise is Table 5.

Table 6: Closure rates in black supermajority polling places

Racial group	Polling places	Closure rate
Not black majority	2,106	17.76
Black majority	410	20.73

142 Among polling places that are at least 60 percent black, the polling place closure rate is approximately 20.7 percent. Among other polling place, the close rate is lower, approximately 17.8 percent. It thus follows that there is no qualitative difference between the results in Table 6 (black majority polling places need to be at least 60 percent black) and Table 5 (black majority polling places need to be at least 50 percent black). Together these two tables imply that, black majority polling places were disproportionately likely to close in Georgia between 2014 and 2018. This implies that precinct address closures in Georgia in this period were not racially neutral.

5.3 Race and new polling place assignments among non-movers in Georgia in the period 2014 to 2018

143 The results in this report have thus far focused on the rates at which polling places closed in Georgia between the 2014 and 2018 General Elections. However, polling place closure is not the only way that a Georgia

registered voter in 2014 could have been affected by reprecincting exercises that took place in Georgia between the two aforementioned general elections. Namely, a registered voter in Georgia could have been assigned a new polling place between 2014 and 2018 even if the voter's original polling place had not been closed. This observation leads me to analyze the rates at which Georgia registered voters in 2014 were assigned to different polling places in 2018, regardless of whether or not such a reassignment was due to a polling place closure.

5.3.1 Overview of non-movers

144 The set of individuals who can contribute to an analysis of the types of registered voters who received new polling places in the period 2014 and 2018 is limited to those Georgia registered voters who appear in both the 2014 and 2018 voterfiles and who did not move between 2014 and 2018. The reason for such a focus on non-movers in particular is that registered voters in Georgia who moved between 2014 and 2018 may have, by virtue of moving, caused themselves to be placed in new precincts, thus receiving new polling places. It would be incorrect to attribute new precincts due to moving to a reprecincting exercise.

145 My analysis of non-movers in Georgia who were registered to vote in Georgia between 2014 and 2018 selects against black registered voters. This is because, as I have already, black individuals tend to move more than white

individuals. Therefore, the conclusions that I describe in this section of my report based on non-movers will understate the effects on black registered voters.

146 Table 7 describes the racial breakdown of 5,245,862 registered voters who appear in the 2014 and 2018 Georgia voterfiles and who have valid 2018 race codes. Ten registered voters are dropped from this table, which explains why 5,245,862 is ten fewer than 5,245,872, the total number of registered voters in 2014 who can be matched to a record in 2018.

Table 7: Distribution of race among registered voters in both the 2014 and 2018 Georgia voterfiles

Race	Count	Percent
White	3,020,291	57.57
Black	1,596,440	30.43
Unknown	376,139	7.17
Hispanic	106,813	2.04
Asian/Pacific Islander	83,047	1.58
Other	58,880	1.12
American Indian/Alaskan	4,252	0.08
Total	5,245,862	100.00

147 Per Table 7, slightly over 57 percent of Georgia registered voters who appear in both the 2014 and 2018 voterfiles are white. The next largest racial group is black with approximately 30 percent. Approximately seven percent of Georgia registered voters who appear in both the 2014 and 2018 voterfiles have unknown races, and slightly more than two percent are Hispanic.

5.3.2 The distribution of race among non-moving Georgia registered voters

148 Table 8 describes the racial breakdown of 3,620,211 non-moving Georgia registrants who were registered to vote in both 2014 and 2018, and the structure of this table parallels that of the previous Table 7, which covered both movers and non-movers in Georgia. Table 8 uses race codes from the 2018 voterfile and drops individuals with clearly erroneous race codes.

Table 8: Distribution of race among non-moving registered voters in both the 2014 and 2018 Georgia voterfiles

Race	Count	Percent
White	2,175,030	60.08
Black	1,026,693	28.36
Unknown	254,885	7.04
Hispanic	67,006	1.85
Asian/Pacific Islander	57,617	1.59
Other	36,745	1.01
American Indian/Alaskan	2,235	0.06
Total	3,620,211	100.00

149 The numbers and percentages in Table 8 show that focusing on non-movers in Georgia between 2014 and 2018 leads to a disproportionately more white, and disproportionately less black, set of registrants. This is evident in the fact that approximately 60 percent of non-movers are white yet approximately 57.6 percent of all Georgia registrants are white (both percentages, of course, condition on a registered voter being in both the 2014 and 2018 voterfiles). Similarly, approximately 28.4 percent of non-movers are black

while approximately 30.4 percent of all registrants are black. Thus, black registered voters are underrepresented, and white registered voters overrepresented, among non-moving registrants in Georgia between 2014 and 2018.

150 Overall the Georgia-wide percentage at which non-movers who were registered in both 2014 and 2018 received new polling places is approximately 18 percent. This covers non-moving registered voters whose polling places were closed between 2014 and 2018 and also those whose polling places were not closed yet were nonetheless assigned to new such places.

151 Table 9 breaks down by new polling place status all non-moving registered voters in Georgia who appear in both the 2014 and 2018 voterfiles. This table covers 3,619,508 registrants, which is 703 fewer than 3,620,211. The reason for this discrepancy is that a very small number of Georgia registered voters have unknown polling places in either 2014 or 2018, and for this small set of individuals it is not possible to determine if they had new polling places in 2018 compared to 2014.

152 The key result in Table 9 is that black voters who were registered as of 2014 were assigned to new polling places at greater rates than white registered voters. Among non-moving registered voters with polling places in 2018 compared to 2014, approximately 59 percent are white. This percentage *increases* to approximately 60 among non-moving registered voters who were not assigned new precincts in 2018 compared to 2014. This increase is evident

Table 9: Distribution of race and new polling place status among non-moving registered voters in both the 2014 and 2018 Georgia voterfiles

Race	New place	Not new place	Difference
White	59.37	60.26	0.89
Black	28.85	28.23	-0.62
Unknown	7.61	6.91	-0.70
Hispanic	1.80	1.86	0.06
Asian/Pacific Islander	1.32	1.65	0.33
Other	1.00	1.02	0.02
American Indian/Alaskan	0.05	0.06	0.01
Total	100.00	100.00	

in Table 9’s *positive* value in the “Difference” column for white registered voters.

153 In contrast, Table 9’s black percentage change *decreases* from almost 29 to approximately 28 percentage points when looking at from non-moving registered voters who were not assigned new polling places in 2018 compared to 2014 compared to those who were assigned new polling places. This increase is evident in Table 9’s *negative* value in the “Difference” columns for black registered voters.

154 The black and white comparisons in Table 9 are underestimates of the extent to which black registered voters in Georgia, in contrast to white registered voters, received new polling places in 2018 compared to 2014. This is because Table 9 by design selects against movers (who are disproportionately black). Black registered voters who received new polling places in 2018 compared to 2014 and moved in this time period are not

incorporated in Table 9. Even so, Table 9 shows that the assignment of new polling places in Georgia between 2014 and 2018 was not racially neutral and in particular that black registered voters were more likely than white registered voters to be assigned to new polling places.

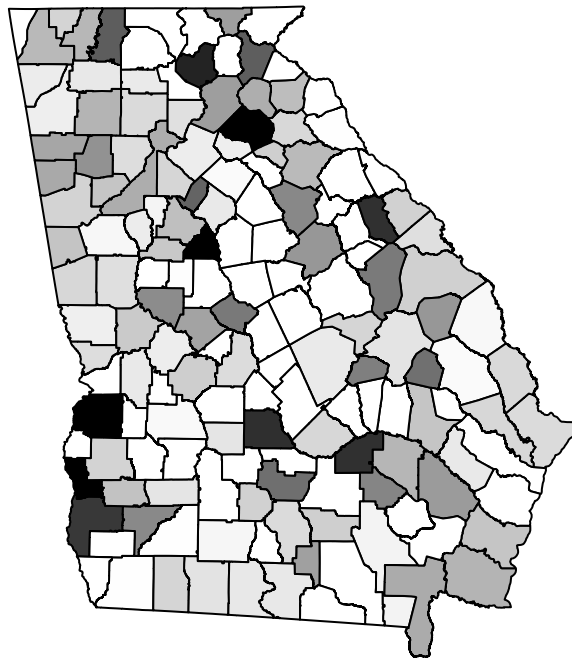
5.3.3 Variance across Georgia counties in the rates at which non-movers received new polling places in 2018 compared to 2014

155 The statewide new polling place rate of approximately 18 percent notwithstanding, there was considerable variance across Georgia's 159 counties in the rates at which non-movers received new polling places. This can be seen in Figure 5, which is a map of Georgia counties shaded by the percentage of non-movers who had new polling places in 2018 compared to 2014.

156 The implication of Figure 5 is that any complications that Georgia registered voters faced on account of having been assigned new polling places between 2014 and 2018 would not have been uniformly distributed across the state. Instead, these complications would have been concentrated in a set of counties.

157 For Georgia's 159 counties, rates of the extent to which non-moving registered voters in Georgia received new polling places in 2018 compared to 2014 are displayed in Figure 6.

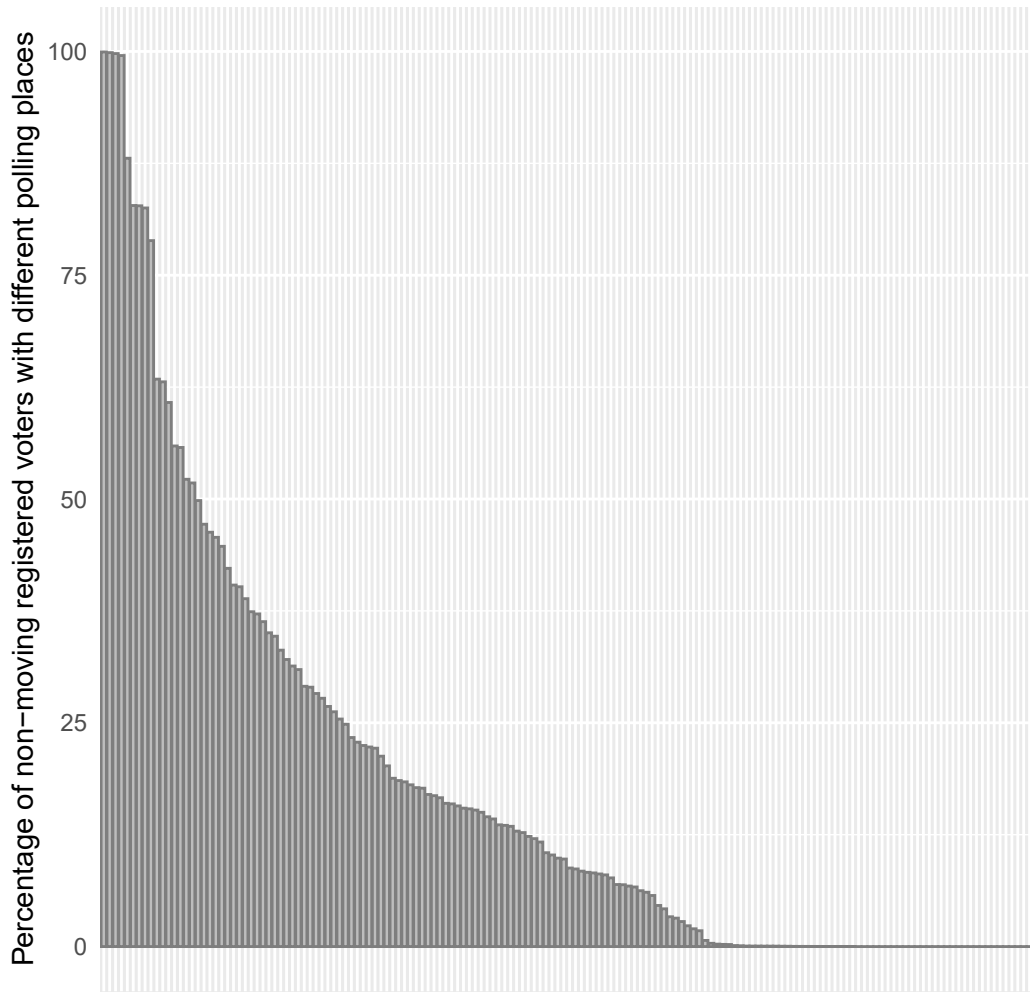
Figure 5: Map of Georgia counties and the extent to which non-moving registered voters had new polling places in 2018 compared to 2014



Note: county shading proportional to percentage of non-movers who had new polling places in 2018 compared to 2014.

158 Figure 6 is a barplot. As in earlier barplots presented in this report, each vertical bar in the figure corresponds to a single Georgia county, and the

Figure 6: Rates at which non-moving registered voters in Georgia had new polling places in 2018 compared to 2014, by county



Note: each bar in the figure represents one Georgia county.

height of a bar indicates the percentage of non-moving registered voters in a county who had new polling places in 2018 compared to 2016. The tallest bar

(100 percent) is from Butts County, where all 9,747 non-moving registered voters had new polling places in 2018.³⁵ The next tallest bar corresponds to Jackson County, and its height is very close to 100 percent.

159 Of Georgia's 159 counties, 31 contained no non-moving registered voters who were assigned new polling places in 2018 compared to 2014. Moreover, 51 counties had between zero and ten non-moving registered voters who had new polling places in 2018. These 49 counties are the reason behind the area to the right of the vertical bars in Figure 6. In this area, bars have either no height at all or only a tiny height that is essentially not visible.

5.3.4 Racial variance across counties in the rates at which non-movers received new polling places in 2018 compared to 2014

160 I now turn to the subject of racial variance across Georgia counties in the rates at which non-moving voters received new polling places in 2018 compared to 2014.

161 For each Georgia county, I identify the number of white non-moving registered voters who received new polling places in 2018 compared to 2014 and the number of white non-moving registered voters. The ratio of these

³⁵Butts County had five polling places in 2016, and they were located at the Butts County Community Center, Jenkinsburg City Hall, Macedonia Baptist Church (called "Stark" in the 2016 precinct list), Towaliga Baptist Church, and Worthville Baptist Church. As of 2018, Butts County had one place polling, located at the Election Office Administration Building.

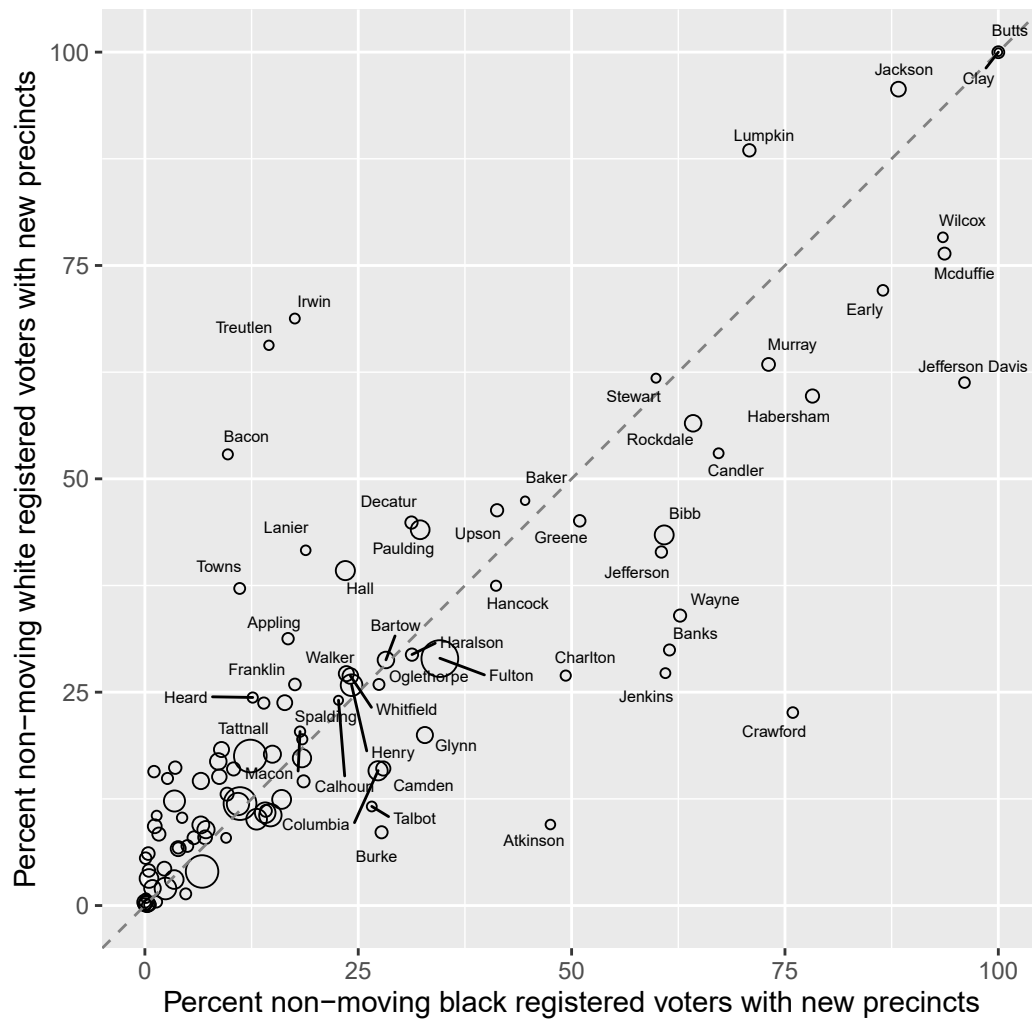
two quantities (multiplied by 100) yields the percentage of white non-movers who received new polling places in 2018.

162 I carry out a similar calculation for black registered voters and plot the white percentage of non-movers who had new polling places against the corresponding black percentage. This yields Figure 7, in which each point denotes a Georgia county. County points in the figure are sized proportionally to total number of registered voters in 2018.

163 Insofar as Figure 7 is based on comparing 2014 polling places to 2018 polling places, by construction it incorporates only registered voters in Georgia who appear in both the 2014 and 2018 voterfiles. The figure, therefore, selects on non-moving status, meaning that registered voters in Georgia as of 2014 who moved prior to 2018 are not included in the figure.

164 The scatterplot in Figure 7 contains a dashed 45-degree line. Counties whose points fall on the line had identical white and black new polling place rates (among non-moving registered voters who appear in the 2014 and 2018 Georgia voterfiles); counties whose points fall above the 45-degree line had greater white new polling place rates than corresponding black rates; and, counties whose points fall below the pictured 45-degree line had greater black new polling place rates than white new precinct rates.

Figure 7: Rates at which non-moving registered voters were assigned new polling places, by race and county



Note: county point size proportional to number of registered voters in 2018.

165 There is a small collection of counties in Figure 7 in which the white new polling place rate is much greater than the corresponding black

rate. The counties of Bacon, Irwin, and Treutlen are exemplars of this. Crawford County illustrates the opposite pattern: the black new polling place rate is much greater than the corresponding white rate. Roughly, Figure 7 shows that there is a large collection of counties (56 in particular) in which black registered voters received new polling places at rates greater than white registered voters.

5.4 New polling places and voter turnout in the 2018 General Election

166 I now consider the extent to which receiving a new polling place in the time period 2014 to 2018 is associated with turnout in the 2018 General Election. This is an important subject because it speaks to potential consequences of the fact that thousands of Georgia registered voters received new polling places between 2014 and 2018. I have already shown that the extent to which 2014 registered voters in Georgia received new polling places in the period 2014 to 2018 was not racially neutral. Now I ask whether there is evidence that receiving a new polling place has downstream consequences for voters. If so, this would compound the lack of racial neutrality in the reprecincting that occurred in Georgia between 2014 and 2018.

5.4.1 Statewide turnout in the 2018 General Election

167 Statewide, among non-moving Georgia registrants who received new polling places between 2014 and 2018, the 2018 General Election turnout rate was approximately 62.9 percent. Among non-moving Georgia registrants who did not receive new polling places, the 2018 turnout rate was approximately 64.2 percent. Thus, receiving a new polling place in the period 2014 to 2018 is associated with a 2018 General Election turnout gap of approximately 1.35 percentage points.

5.4.2 Turnout in the 2018 General Election broken down by race

168 I now disaggregate this Georgia-wide result by race. To that end, Table 10 focuses on non-movers in Georgia who were registered to vote in both 2014 and 2018. The table breaks down these registered voters by the race groups that have appeared throughout this report and also by the extent to which the registered voters received new polling places between 2014 and 2018.

Table 10: 2018 General Election turnout by race

Race	2014 voters	New place	Not new	Difference
White	2,172,086	67.03	68.01	-0.98
Black	1,024,340	60.63	62.57	-1.94
Unknown	254,348	47.84	48.32	-0.49
Hispanic	66,903	44.60	47.20	-2.60
Asian/Pacific Islander	57,499	49.12	49.45	-0.33
Other	36,657	49.60	51.90	-2.30
American Indian/Alaskan	2,227	41.95	48.75	-6.80

169 Consider the top row of Table 10. According to this row, of the approximately 2.1 million non-moving white registered voters in 2014 who were also registered in 2018, approximately 67 percent of those who received new polling places between 2014 and 2018 turned out to vote in 2018. In contrast, approximately 68 percent of those who did not receive new polling places between 2014 and 2018 turned out to vote in 2018. In other words, a white registered voter receiving a new polling place in the period 2014 to 2018 is associated with a turnout drop of approximately one percentage point.

170 Now I turn to the approximately one million non-moving black voters covered in Table 10. The 2018 turnout rate among those individuals who received new polling places between 2014 and 2018 is approximately 60.6 percent, and the corresponding turnout rate for black registered voters who did not receive new polling places is approximately 62.6 percent. Thus, a black registered voter receiving a new polling place in the period 2014 to 2018 is associated with a turnout drop of approximately two percentage points.

171 With respect to its focus on racial groups in Georgia, this report has for the most part restricted its attention to black and white registered voters, the two largest racial groups in Georgia's registered voter pool. Looking beyond these groups, Table 10 highlights a sizable Hispanic effect. Namely, non-moving Hispanic registered voters who received new polling places between 2014 and 2018 were less likely to vote in the 2018 General Election

compared to non-moving Hispanic registered voters who did not receive new polling places between in this time frame.

172 Among non-moving black and white registered voters in Georgia who were on the voter rolls in both 2014 and 2018, those who received new polling places between 2014 and 2018 had lower turnout rates in the 2018 General Election. This statement applies to every race group considered in Table 10. Such a result testifies to the non-racial neutrality of downstream consequences of the extent to which registered voters in Georgia received new polling places in the time period 2014 to 2018.

173 I now take all of the registered voters described in Table 10 and consider the subset of this group that consists of individuals who voted in the 2014 General Election. I then re-calculate the statistics in the table, and this yields Table 11.

Table 11: 2018 turnout by race among 2014 voters

Race	2014 voters	New place	Not new	Difference
White	1,256,834	87.44	87.70	-0.26
Black	529,624	87.51	88.40	-0.88
Unknown	95,376	82.05	81.91	0.14
Hispanic	18,985	80.04	80.43	-0.39
Asian/Pacific Islander	16,253	81.45	82.59	-1.14
Other	13,551	81.66	83.35	-1.69
American Indian/Alaskan	723	86.27	81.80	4.47

174 Table 11 restricts attention to ostensibly politically active individuals. This is evident in the higher turnout percentages compared to the earlier Table 10.

175 Even among politically active registered voters, being assigned a new voting place between 2014 and 2018 is associated with lower 2018 General Election turnout. This follows from the fact that the percentages in the “Not new place” column in Table 11 are, for most of the racial groups in the table (this statement includes white and black registered voters), greater than corresponding percentages in the “New place” column. Moreover, the black decrease in 2018 General Election turnout is greater in magnitude than the white decrease.

5.4.3 Election day turnout in the 2018 General Election

176 I now consider election day turnout in the 2018 General Election. If polling place changes led to decreased turnout, as suggested by the analysis above, then I would expect to see similar if not greater effects on election day turnout *per se*.

177 Parallel to the analyses shown above, Table 12 reports election day turnout rates in the 2018 General Election by race. For example, among non-moving white registered voters, approximately 27 percent of those who received new polling places between 2014 and 2018 voted on election day in November 2018. In contrast, approximately 31 percent of registered voters

Table 12: 2018 General Election turnout by race, election day only

Race	2014 voters	New place	Not new	Difference
White	2,172,086	26.57	31.22	-4.65
Black	1,024,340	21.45	24.28	-2.83
Unknown	254,348	19.92	22.40	-2.49
Hispanic	66,903	23.83	27.29	-3.46
Asian/Pacific Islander	57,499	22.51	25.63	-3.12
Other	36,657	21.22	24.95	-3.73
American Indian/Alaskan	2,227	16.67	25.17	-8.51

who did not receive new polling places between 2014 and 2018 voted on election day in November 2018. The difference between these two quantities is negative, indicating that, for white registered voters, receiving a new polling place in the 2014 to 2018 time frame is associated with a decreased likelihood of voting on election day in the 2018 General Election.

178 I find a similar, albeit of smaller magnitude, finding for the election day turnout rate in the 2018 General Election among non-moving black registered voters. Moreover, all of the differences in Table 12 are negative. This implies that, for non-moving registered voters of all races, receiving a new polling place in the 2014 to 2018 time frame is associated with a decreased likelihood of voting on election day in the 2018 General Election.

179 Table 13 restricts attention to non-moving registered voters who voted in the 2014 General Election. Among these individuals, receiving a new polling place between 2014 and 2018 is associated with lower election day turnout in the 2018 General Election. This regularity is apparent in all

Table 13: 2018 turnout by race among 2014 voters, election day only

Race	2014 voters	New place	Not new	Difference
White	1,256,834	31.33	37.61	-6.27
Black	529,624	26.57	30.35	-3.77
Unknown	95,376	28.91	33.34	-4.42
Hispanic	18,985	36.48	41.78	-5.31
Asian/Pacific Islander	16,253	32.68	40.42	-7.74
Other	13,551	30.43	35.47	-5.04
American Indian/Alaskan	723	27.45	38.16	-10.71

race groups, as the negative “Difference” entries in Table 13 makes clear.

6 Conclusion

180 This report assesses polling place closures made across Georgia in the 2014 to 2018 time period. As of 2014, there were 2,516 polling places in the state. By 2018, 459 had closed, and this affected over one million registered voters in Georgia, all of whom were assigned new polling places in time for the 2018 General Election.

181 Using a variety of approaches and data on millions of Georgia registered voters, I have shown that black registered voters, compared to white registered voters, were disproportionately affected by Georgia’s polling place closures in the period 2014 to 2018. This implies that the polling place closures that took place in Georgia were not racially neutral.

182 Existing literature in political science provides evidence that eligible voters whose voting places change are less likely to vote in future elections. I have shows that patterns in turnout in Georgia in the 2018 General Election are consistent with this result. Compared to individuals whose polling places in Georgia did not change prior to the 2018 General, those registered voters who were assigned new polling place between 2014 and 2018 were less likely to vote, and less likely to vote on election day, in November 2018. Such downstream effects of polling place closures will magnify the racial biases in the closures themselves.

7 Appendix: *curriculum vitae* of Michael C. Herron

Michael C. Herron

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Academic appointments

William Clinton Story Remsen 1943 Professor, Department of Government, Dartmouth College. July 2013–present.

Chair, Program in Quantitative Social Science, Dartmouth College. July 2015–present.

Visiting Scholar, Hertie School of Governance, Berlin, Germany. August 2016–July 2017.

Chair, Program in Mathematics and Social Sciences, Dartmouth College. July 2014– June 2015.

Professor, Department of Government, Dartmouth College. July 2009–June 2013.

Visiting Professor of Applied Methods, Hertie School of Governance, Berlin, Germany. August 2011–August 2012.

Associate Professor, Department of Government, Dartmouth College. July 2004–June 2009.

Visiting Associate Professor, Department of Government, Harvard University. July 2008–January 2009.

Visiting Associate Professor, Wallis Institute of Political Economy, University of Rochester. September 2006–December 2006.

Visiting Assistant Professor, Department of Government, Dartmouth College. July 2003–June 2004.

Assistant Professor, Department of Political Science, Northwestern University. September 1997–June 2004.

Faculty Associate, Institute for Policy Research, Northwestern University. September 2002–June 2004.

Education

PhD Business (Political Economics), Stanford University, January, 1998.

Dissertation: Political Uncertainty and the Prices of Financial Assets

Committee: David Baron, Darrell Duffie, Douglas Rivers, and Barry Weingast

MS Statistics, Stanford University, June 1995.

MA Political Science, University of Dayton, August 1992.

BS Mathematics and Economics, with University Honors, Carnegie Mellon University, May 1989.

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Fellowships

Elizabeth R. and Robert A. Jeffe 1972 Fellowship, Dartmouth College. September 2010–June 2011.

Fulbright Scholar Program fellowship for research and teaching at the Heidelberg Center for American Studies, Heidelberg University, September 2009 - February 2010 (declined).

Post-doctoral Research Fellow, Center for Basic Research in the Social Sciences, Harvard University. September 2000–August 2001.

Publications

Journal articles

“Voting lines, equal treatment, and early voting check-in times in Florida” (with David Cottrell and Daniel A. Smith). Forthcoming, *State Politics & Policy Quarterly*.

“Early voting changes and voter turnout: North Carolina in the 2016 General Election” (with Hannah L. Walker and Daniel A. Smith). *Political Behavior* 41(4): 841-869. 2019.

“Mail-in absentee ballot anomalies in North Carolina’s 9th Congressional District.” *Election Law Journal* 18(3): 191-213. 2019.

“Relative age effects in American professional football” (with Jack F. Heneghan). *Journal of Quantitative Analysis in Sports* 15(3): 185-202. 2019.

“Mortality, Incarceration, and African-American Disenfranchisement in the Contemporary United States” (with David Cottrell, Javier M. Rodriguez, and Daniel A. Smith). *American Politics Research* 47(2): 195-237. 2019.

“Pedagogical Value of Polling Place Observation By Students” (with 31 co-authors). *PS: Political Science & Politics* 51(4): 831-847. 2018.

“All in the family: German twin finishing times in the 2016 women’s Olympic marathon” (with David Cottrell). *CHANCE* 31(3): 20-28. 2018.

“An Exploration of Donald Trump’s Allegations of Massive Voter Fraud in the 2016 General Election” (with David Cottrell and Sean J. Westwood). *Electoral Studies* 51(1): 123-142. 2018.

“Student Sorting and Implications for Grade Inflation (with Zachary D. Markovich). *Rationality and Society* 29(3): 355-386. 2017.

“Race, Shelby County, and the Voter Information Verification Act in North Carolina” (with Daniel A. Smith). *Florida State University Law Review* 43: 465-506. 2016.

“Precinct Resources and Voter Wait Times” (with Daniel A. Smith). *Electoral Studies* 42(2): 249-263. 2016.

“A Careful Look at Modern Case Selection Methods” (with Kevin M. Quinn). *Sociological Methods & Research* 45(3): 458-492. 2016.

“Precinct Closing and Wait Times in Florida during the 2012 General Election” (with Daniel A. Smith). *Election Law Journal* 14(3): 220-238. 2015.

“Race, Party, and the Consequences of Restricting Early Voting in Florida in the 2012 General Election” (with Daniel A. Smith). *Political Research Quarterly* 67(3): 646-665. 2014.

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3

"The Effects of House Bill 1355 on Voter Registration in Florida" (with Daniel A. Smith). *State Politics & Policy Quarterly* 13(3): 279-305. 2013.

"Blacks, Hispanics, and Whites: A Study of Race-based Residual Vote Rates in Chicago." *American Politics Research* 41(2): 203-243. 2013.

"Alvin Greene? Who? How did he win the United States Senate nomination in South Carolina?" (with Joseph Bafumi, Seth J. Hill, and Jeffrey B. Lewis). *Election Law Journal* 11(4): 358-379. 2012.

"Souls to the Polls: Early Voting in Florida in the Shadow of House Bill 1355" (with Daniel A. Smith). *Election Law Journal* 11(3): 331-347. 2012.

"Leapfrog Representation and Extremism: A Study of American Voters and their Members in Congress" (with Joseph Bafumi). *American Political Science Review* 104(3): 519-542. 2010.

"Economic Crisis, Iraq, and Race: A Study of the 2008 Presidential Election" (with Seth J. Hill and Jeffrey B. Lewis). *Election Law Journal* 9(1): 41-62. 2010.

"Prejudice, Black Threat, and the Racist Voter in the 2008 Presidential Election" (with Joseph Bafumi). *Journal of Political Marketing* 8(4): 334-348. 2009.

"Voting Technology and the 2008 New Hampshire Primary" (with Walter R. Mebane, Jr., and Jonathan N. Wand). *William & Mary Bill of Rights Journal* 17(2): 351-374. 2008.

"Ballot Formats, Touchscreens, and Undervotes: A Study of the 2006 Midterm Elections in Florida" (with Laurin Frisina, James Honaker, and Jeffrey B. Lewis). *Election Law Journal* 7(1): 25-47. 2008.

"Gerrymanders and Theories of Lawmaking: A Study of Legislative Redistricting in Illinois" (with Alan E. Wiseman). *Journal of Politics* 70(1): 151-167. 2008.

"Estimating the Effect of Redistricting on Minority Substantive Representation" (with David Epstein, Sharyn O'Halloran, and David Park). *Journal of Law, Economics, and Organization* 23(2): 499-518. 2007.

"Did Ralph Nader Spoil Al Gore's Presidential Bid? A Ballot-Level Study of Green and Reform Party Voters in the 2000 Presidential Election" (with Jeffrey B. Lewis). *Quarterly Journal of Political Science* 2(3): 205-226. 2007.

"Assessing Partisan Bias in Voting Technology: The Case of the 2004 New Hampshire Recount" (with Jonathan N. Wand). *Electoral Studies* 26(2): 247-261. 2007.

"Term Limits and Pork" (with Kenneth W. Shotts). *Legislative Studies Quarterly* 31(3): 383-404. 2006.

"Black Candidates and Black Voters: Assessing the Impact of Candidate Race on Uncounted Vote Rates" (with Jasjeet S. Sekhon). *Journal of Politics* 67(1): 154-177. 2005.

"Government Redistribution in the Shadow of Legislative Elections: A Study of the Illinois Member Initiatives Grant Program" (with Brett A. Theodos). *Legislative Studies Quarterly* 24(2): 287-312. 2004.

"Studying Dynamics in Legislator Ideal Points: Scale Matters." *Political Analysis* 12(2): 182-190. 2004.

"Logical Inconsistency in EI-based Second Stage Regressions" (with Kenneth W. Shotts). *American Journal of Political Science* 48(1): 172-183. 2004.

"Overvoting and Representation: An examination of overvoted presidential ballots in Broward and Miami-Dade counties Counties" (with Jasjeet S. Sekhon). *Electoral Studies* 22: 21-47. 2003.

"Using Ecological Inference Point Estimates as Dependent Variables in Second Stage Linear Regressions" (with Kenneth W. Shotts). *Political Analysis* 11(1): 44-64. 2003.

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"Cross-contamination in EI-R" (with Kenneth W. Shotts). *Political Analysis* 11(1): 77–85. 2003.

"A Consensus on Second Stage Analyses in Ecological Inference Models" (with Christopher Adolph, Gary King, and Kenneth W. Shotts). *Political Analysis* 11(1): 86–94. 2003.

"The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, Florida" (with Jonathan N. Wand, Kenneth W. Shotts, Jasjeet S. Sekhon, Walter R. Mebane, Jr., and Henry E. Brady). *American Political Science Review* 95(4): 793–810. 2001.

"Interest Group Ratings and Regression Inconsistency." *Political Analysis* 9(3): 260–274. 2001.

"Leadership and Pandering: A Theory of Executive Policymaking" (with Brandice Canes-Wrone and Kenneth W. Shotts). *American Journal of Political Science* 45(3): 532–550. 2001.

"Law and Data: The Butterfly Ballot Episode" (with Henry E. Brady, Walter R. Mebane, Jr., Jasjeet S. Sekhon, Kenneth W. Shotts, and Jonathan N. Wand). *PS: Political Science & Politics* 34(1): 59–69. 2001.

"Cutpoint-Adjusted Interest Group Ratings." *Political Analysis* 8(4): 346–366. 2000.

"Estimating the Economic Impact of Political Party Competition in the 1992 British Election." *American Journal of Political Science* 44(2): 326–337. 2000.

"Artificial Extremism in Interest Group Ratings and the Preferences versus Party Debate." *Legislative Studies Quarterly* 24(4): 525–542. 1999.

"Post-Estimation Uncertainty in Limited Dependent Variable < Models." *Political Analysis* 8(1): 83–98. 1999.

"Measurement of Political Effects in the United States Economy: A Study of the 1992 Presidential Election" (with James Lavin, Donald Cram, and Jay Silver). *Economics & Politics* 11(1): 51–81. 1999.

"The Influence of Family Regulation, Connection, and Psychological Autonomy on Six Measures of Adolescent Functions" (with Melissa R. Herman, Sanford M. Dornbusch, and Jerald R. Herting). *Journal of Adolescent Research* 12(1): 34–67. 1997.

Book chapters

"Wait Times and Voter Confidence: A Study of the 2014 General Election in Miami-Dade County" (with Daniel A. Smith, Wendy Serra, and Joseph Bafumi). In *Races, Reforms, & Policy: Implications of the 2014 Midterm Elections*, Christopher J. Galdieri, Tauna S. Sisco, and Jennifer C. Lucas, eds. Akron, OH: University of Akron Press. 2017.

"A Dynamic Model of Multidimensional Collective Choice" (with David P. Baron). In *Computational Models in Political Economy*, Ken Kollman, John H. Miller, and Scott E. Page, eds. Cambridge, MA: The MIT Press. 2003.

"Law and Data: The Butterfly Ballot Episode" (with Henry E. Brady, Walter R. Mebane Jr., Jasjeet Singh Sekhon, Kenneth W. Shotts, and Jonathan Wand). In *The Longest Night: Polemics and Perspectives on Election 2000*, Arthur J. Jacobson and Michel Rosenfeld, eds. Berkeley: University of California Press. 2002.

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Book reviews

The Timeline of Presidential Elections: How Campaigns Do (and Do Not) Matter, Robert S. Erikson and Christopher Wlezien. *Political Science Quarterly* 128(3): 552-553. 2013.

Voting Technology: The Not-So-Simple Act of Casting a Ballot, Paul S. Herrnson, Richard G. Niemi, Michael J. Hammer, Benjamin B. Bederson, and Frederick C. Conrad. *Review of Policy Research* 25(4): 379-380. 2008.

Other publications

"If more states start using Ohio's system, how many voters will be purged?" (with Daniel A. Smith). *The Washington Post*, Monkey Cage, June 17, 2018.

"Do we have a right not to vote? The Supreme Court suggests we don't" (with Daniel A. Smith). *New York Daily News*, June 12, 2018.

"Nearly 4 million black voters are missing. This is why" (with David Cottrell, Javier M. Rodriguez, and Daniel A. Smith). *The Washington Post*, Monkey Cage, April 11, 2018.

"We can't find any evidence of voting fraud in New Hampshire" (with David Cottrell and Sean Westwood). *The Washington Post*, Monkey Cage, February 28, 2017.

"We checked Trump's allegations of voter fraud. We found no evidence at all" (with David Cottrell and Sean Westwood). *The Washington Post*, Monkey Cage, December 2, 2016.

"High ballot rejection rates should worry Florida voters" (with Daniel A. Smith). *Tampa Bay Times*, October 28, 2012.

"Logistic Regression." *The Encyclopedia of Political Science*, George Thomas Kurian, James E. Alt, Simone Chambers, Geoffrey Garrett, Margaret Levi, and Paula D. McClain, eds., Washington, D.C.: CQ Press. 2010.

"Using XEmacs Macros to Process ASCII Data Files." *The Political Methodologist* 13(2): 13-18. 2005.

"Ohio 2004 Election: Turnout, Residual Votes and Votes in Precincts and Wards" (with Walter R. Mebane, Jr.), in "Democracy At Risk: The 2004 Election in Ohio," report published by the Democratic National Committee. 2005.

"Poisson Regression." *The Encyclopedia of Social Science Research Methods*, Alan Bryman, Michael Lewis-Beck, and Tim Futing Liao, eds. Thousand Oaks, CA: Sage Publications, 2003.

"Pork barrel race to the bottom" (with Brett A. Theodos). *Illinois Issues* 29(2): 22-23. 2003.

"Teaching Introductory Probability Theory." *The Political Methodologist* 10(2): 2-4. 2002.

"Ballot cost Gore thousands of votes" (with Henry E. Brady and Jonathan N. Wand). *The San Diego Union-Tribune*, p. G3, November 19, 2000.

Work in progress

"Did ballot design oust an incumbent senator? A study of the 2018 midterm election in Florida" (with Michael D. Martinez and Daniel A. Smith).

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Awards

Best Paper Award, State Politics and Policy Section, 2013 Annual Meeting of the American Political Science Association. *Getting Your Souls to the Polls: The Racial Impact of Reducing Early In-Person Voting in Florida* (with Daniel A. Smith).

Grants

Committee for Scholarly Innovation and Advancement Awards, Dartmouth College, February, 2014. Project title: "The Dynamics of Voting Lines in Miami-Dade County." Financial support: \$32,000.

The Rockefeller Center for Public Policy and the Social Sciences, Dartmouth College, May, 2006. Project title: "Large Scale Survey of Americans in Multiple Congressional Districts." Financial support: \$8,500.

National Science Foundation, SES-041849, July, 2004. Project title: "A Ballot-Level Study of Intentional and Unintentional Abstention in Presidential Election Voting." Financial support: \$65,749.

Nelson A. Rockefeller Center for the Social Sciences, Dartmouth College, January, 2004. Project title: "Intentional Invalid Votes in Leon County, Florida." Financial support: \$1,115.

American Enterprise Institute, August, 1999. Project title: "Tenure in Office and Congressional Voting" (with Kenneth W. Shotts). Financial support: \$182,500.

University Research Grants Committee, Northwestern University, February, 1999. Project Title: "Representation, Policy Uncertainty, and Divided Government." Financial support: \$4,087.

Stanford University Graduate School of Business, 1997–1998 Academic Year. Dissertation Research Grant.

Recent conference presentations

"Ballot design, voter intentions, and representation: A study of the 2018 midterm election in Florida," 2019 Annual Meeting of the American Political Science Association, Washington, DC.

"Ballot design, voter intentions, and representation: A study of the 2018 midterm election in Florida," Election Sciences, Reform, and Administration conference, 2019, University of Pennsylvania.

"Did ballot design oust an incumbent senator? A study of the 2018 midterm election in Florida," Congressional Elections & the Presidency: Politics in 2018, March 30, 2019, Saint Anselm College, Manchester NH.

"Estimating the Differential Effects of Purging Inactive Registered Voters," 2018 Annual Meeting of the American Political Science Association, Boston MA.

"Estimating the Differential Effects of Purging Inactive Registered Voters," Election Sciences, Reform, and Administration conference, 2018, University of Wisconsin-Madison.

Keynote address, "Mortality, Incarceration, and African-American Disenfranchisement," *Balancing the Scales: The United States in an Age of Inequality*, November 11, 2016, John F. Kennedy Institute, Freie Universität Berlin.

"Missing Black Men and Representation in American Political Institutions," 2016 Annual Meeting of the Midwest Political Science Association, Chicago, IL.

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Invited seminars

University of Iowa, 1999	University of Mannheim, 2011
Boston University, 2000	University of Heidelberg, 2011
Dartmouth College, 2000	University of Passau, 2012
Harvard University, 2000	University of Göttingen, 2012
University of Minnesota, 2000	Freie Universität Berlin, 2012
University of Rochester, 2000	Laval University, 2012
University of Wisconsin, Madison, 2000	University of Montreal, 2012
Yale University, 2000	Middlebury College, 2013
Columbia University, 2001	University of Illinois, Champaign, 2013
University of California, Berkeley, 2002	University of Illinois, Chicago, 2013
University of Illinois, 2002	University of Wisconsin, Madison, 2013
Brown University, 2003	Yale University, 2014
Temple University, 2003	University of Virginia, 2015
University of Chicago, 2003	University of California, San Diego, 2015
New York University, 2004	American University, 2015
Princeton University, 2004	Massachusetts Institute of Technology, 2015
University of Michigan, 2005	Princeton University, 2015
George Washington University, 2006	University of California, Los Angeles, 2016
Emory University, 2006	The Ohio State University, 2016
Harvard University, 2007	Freie Universität Berlin, 2016
Loyola Law School, 2007	Deutsch-Amerikanisches Institut, Nürnberg, 2017
Columbia University, 2007	Universität Bonn, 2018
University of Chicago, 2007	Freie Universität Berlin, 2018
Yale University, 2007	Northwestern University, 2018
Stanford University, 2008	University of Pittsburgh, 2019
Columbia University, 2008	University of Salzburg, 2019
Northwestern University, 2008	Universität Bonn, 2019
Princeton University, 2008	Freie Universität Berlin, 2019
Duke University, 2009	Humboldt University, 2019
Hertie School of Governance, 2010	University of North Carolina, Charlotte, 2019
Emory University, 2010	

Professional activities

Division Chair, Representation and Electoral Systems, 2017 Annual Meeting of the Midwest Political Science Association.

Associate Editor, *Research & Politics*. November, 2016–present.

Editorial Board, *American Politics Research*, September, 2015–present.

Editorial Board, *Political Analysis*, January, 2010–present.

Editorial Board, *USENIX Journal of Election Technology and Systems*, March, 2013–June, 2016.

Editorial Board, *American Political Science Review*, 2010–2012.

Editorial Board, *American Journal of Political Science*, 2006–2009.

“Race, Voting Procedures, and New Developments in Voting Rights,” panel organized for the 2013 Annual Meeting of the Midwest Political Science Association.

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Division Chair, Formal Theory, 2007 Annual Meeting of the American Political Science Association.
 Co-editor, *The Political Methodologist*, Fall, 2004–Spring, 2006.
 Publications Committee, Society for Political Methodology, 2005–2006, 2015–present.

Dartmouth College activities

Chair, American Politics Search Committee, Department of Government, August 2018–March 2019.
 Chair, Committee on Priorities, July 2015–June 2016.
 Committee on Priorities, July 2013–June 2015.
 American politics search committee, Department of Government, August 2014–December 2014.
 Research Computing Director search committee, October 2013–October 2014.
 Senior Search Committee, Department of Government, 2013.
 Research Computing Advisory Committee, Spring 2013.
 Chair, American Politics Search Committee, Department of Government, 2012–2013.
 Recruitment Planning Committee, Department of Government, 2010 and 2012–2013.
 Committee on Standards, 2008–2010.
 Task Force on Collaboration and Social Software, 2007–2008.
 Biostatistics search committee, Dartmouth Medical School, 2006–2007.
 Research Computing Oversight Committee, 2006.
 Council on Computing, 2005–2007.
 Clement Chair search committee, Department of Government, 2005–2006.

Northwestern University activities

Program Committee, Mathematical Methods in the Social Sciences, 2001–2002.
 American Politics Search Committee, Department of Political Science, 2000–2001, 2001–2002.
 Formal Theory Search Committee, Department of Political Science, 1997–1998.

Teaching interests

Statistical methods: introductory and applied statistics, research design, computing in R, Bayesian statistics.
 American politics: representation, election irregularities, election administration.
 Political economy: game theory.

Michael C. Herron

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Reviewer for

<i>American Journal of Political Science</i>	<i>Political Analysis</i>
<i>American Political Science Review</i>	<i>Political Behavior</i>
<i>American Politics Quarterly</i>	<i>Political Research Quarterly</i>
<i>American Politics Review</i>	<i>Political Science Quarterly</i>
<i>British Journal of Political Science</i>	<i>Political Science Research and Methods</i>
Cambridge University Press	<i>Political Studies</i>
Chapman & Hall	<i>Politics & Gender</i>
<i>Congress & the Presidency</i>	<i>Politics, Groups, and Identities</i>
<i>Du Bois Review</i>	<i>Polity</i>
<i>Economics & Politics</i>	Prentice Hall Higher Education Group
<i>Election Law Journal</i>	<i>Proceedings of the National Academy of Sciences</i>
<i>Electoral Studies</i>	<i>Public Administration</i>
<i>Emerging Markets Finance & Trade</i>	<i>Public Choice</i>
<i>Interest Groups & Advocacy</i>	<i>Public Opinion Quarterly</i>
<i>Int'l Journal of Environmental Research and Public Health</i>	<i>PS: Political Science and Politics</i>
John Wiley & Sons, Inc.	<i>Quarterly Journal of Economics</i>
<i>Journal of Legal Studies</i>	<i>Quarterly Journal of Political Science</i>
<i>Journal of Money, Credit and Banking</i>	<i>The Social Science Journal</i>
<i>Journal of Politics</i>	<i>Social Science Quarterly</i>
<i>Journal of Public Economics</i>	<i>Sociological Methods & Research</i>
<i>Journal of Race, Ethnicity, and Politics</i>	<i>The Sociological Quarterly</i>
<i>Journal of Theoretical Politics</i>	Springer
<i>Journal of Women, Politics & Policy</i>	<i>State Politics & Policy Quarterly</i>
<i>Legislative Studies Quarterly</i>	Time-Sharing Experiments for the Social Sciences
The National Science Foundation	The University of Michigan Press
<i>Nonprofit Policy Forum</i>	W. W. Norton & Company
<i>Perspectives on Politics</i>	<i>World Politics</i>
<i>Policy Studies Journal</i>	

Foreign language

German: C1 (telc Prüfung, Ausstellung July 27, 2017).

Other employment

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I declare under penalty of perjury that the foregoing is true and correct. Executed this 18th day of February 2020, at Hanover, New Hampshire.

A handwritten signature in black ink, appearing to read "Michael C. Herron", is written over a horizontal line.

Michael C. Herron, Ph.D.

CERTIFICATE OF SERVICE

I hereby certify that, on February 18, 2020, I caused to be served the foregoing **REPORT OF PLAINTIFFS' EXPERT WITNESS MICHAEL C HERRON** by filing it through the Court's ECF system, which will serve the following counsel:

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DEFENDANTS' EX. 4

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF GEORGIA
ATLANTA DIVISION**

FAIR FIGHT ACTION, INC, *et al.*,

Plaintiffs,

v.

BRAD RAFFENSPERGER, *et al.*,

Defendants.

Civ. Act. No. 18-cv-5391 (SCJ)

SUPPLEMENTAL EXPERT REPORT OF MICHAEL C. HERRON

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April 8, 2020



Michael C. Herron, Ph.D.

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1 Introduction

1 This Supplemental Expert Report is a response to two reports filed in this litigation on March 24, 2020 by experts engaged by the State. The first report to which I am responding is titled, “Supplemental Report #1 of Thomas L. Brunell, Ph.D.,” and hereinafter I refer to it as the *Brunell Report*. The second such report is titled, “Rebuttal Report of Janet R. Thornton, Ph.D.,” and hereinafter I refer to this report as the *Thornton report*. Both the Brunell Report and the Thornton Report critique a report I wrote, titled “EXPERT REPORT OF MICHAEL C. HERRON,” dated February 18, 2020. Throughout this Supplemental Expert Report, I refer to this lattermost report as *my original report*.

2 The subject of my original report is the extent of polling place changes in Georgia in the period 2014-2018 and the extent to which these changes were racially neutral. In what follows, I briefly summarize the conclusions in my original report that were not disputed in the Brunell and Thornton Reports. I then discuss the Brunell Report and the Thornton Report in this order. Following my comments on these two reports, I return to the conclusions about polling place changes in Georgia that appear in my original report, and I explain why my conclusions remain valid, and in some dimensions actually have become stronger, despite the critiques leveled at them in the Brunell and Thornton Reports.

2 Conclusions in my original report not disputed in the Brunell and Thornton Reports

3 Broadly construed, my original report describes an analytical exercise in which I identify and characterize polling place closures in Georgia in the period 2014-2018 and then offer opinions as to the racial implications of these closures.

4 When I submitted my original report, I disclosed the data that I used to generate it. Following my deposition on February 26, 2020 in New York City, I disclosed the computer code that I wrote to analyze the data on which my report relies.

5 Neither Dr. Brunell nor Dr. Thornton raises any concerns about the accuracy of the data sources that I used in my report. In addition, neither raises any concerns about the computer code that I wrote in support of my analyses. Dr. Thornton appears to have worked directly with my code, writing that “[Dr. Herron’s] code was modified in order to generate his summary results by county as reported below” (p. 6).

6 In my original report, I define a closed polling place as one that was in use during the 2014 General Election but not in the 2018 General Elec-

tion. Dr. Brunell and Dr. Thornton raise questions about whether this is an appropriate definition of a closed polling place, but neither raises concerns about my calculations of closed polling place rates in Georgia based on the definition of a closed polling place offered in my report. My report offers a variety of approaches to the study of polling place closures in Georgia that took place in the 2014-2018 time period, and among other things it concludes that the rates at which polling places in Georgia closed in predominantly Black areas of the state in 2014-2018 exceed the rates at which polling places in Georgia closed in predominantly White areas of the state in 2014-2018. Neither Dr. Brunell nor Dr. Thornton disputes the calculations that support this conclusion.

7 My original report concludes that 2018 General Election turnout rates of registered voters in Georgia who received new polling places between 2014 and 2018 were lower than turnout rates of registered voters in the state who did not receive new polling places between 2014 and 2018. Neither Dr. Brunell nor Dr. Thornton disputes the calculations that lead to this result. In her report, Dr. Thornton draws particular attention to differential election day turnout rates in the 2018 General Election between Georgia registered voters who received new polling places in the period 2014-2018 and those who did not. She implies that the former individuals were “disenfranchised” via assignment of a new polling place (see p. 18, paragraph 43, of the Thornton Report).

3 Response to the Brunell Report

8 I now turn to the Brunell Report and the critiques that it levels at my original report. I believe that there are seven such critiques.

3.1 Critique: decisions about polling places in Georgia are made at the county level

9 At the start of his discussion of my original report, Dr. Brunell writes as follows: “[I]t is important to note that decisions regarding whether to move, open, or close a polling place is (sic) made at the county level. The state of Georgia is not responsible for these decisions. Thus, from the start, Prof. Herron’s report does not add any value to considerations related to policies of the *state of Georgia*” (p. 5, emphasis in original).

10 The context of this critique is that my original report’s results about polling place closures in Georgia in the time period 2014-2018 are statewide. This is because, simply, I was asked to study the extent of polling place closures in Georgia in the post-*Shelby County* period. My original report is open about the fact that it does not cover the entire post-*Shelby County* period, and this is because of a lack of data on polling place closures in Georgia between the promulgation of *Shelby County* and the 2014 General Election, which took place in November 2014. As such, my original report’s results should be understood as conservative insofar as there may have been

post-*Shelby County* polling place closures in Georgia that are beyond its scope.

11 My original report says nothing about the individuals or institutions in Georgia that promulgated the decisions that led to the polling place closures and changes that are documented in it. This matter is outside of the scope of my report. The report also says nothing about the intentions of the individuals who collectively staff these institutions. The matter of intentions is also outside the scope of my original report.

12 The key point here is this: the identities of the bearers of legal responsibility for the polling place closures and changes that took place in Georgia following *Shelby County* have nothing to do with the empirical findings that my report describes. Put another way, my original report seeks to document what has happened in the past several years in Georgia regarding polling place changes, and the statistical calculations in the report stand on their own independently of the identities of the decision makers behind the polling place changes described therein.

13 My original report does not assign responsibility to any officials in the state for what it documents. While, without citation, Dr. Brunell writes affirmatively that, “The state of Georgia is not responsible for...decisions [about polling places]” (p. 5), my report takes no such position on this form of responsibility. The legal question of who bears responsibility for the polling

place changes described and analyzed in my original report is outside my expertise and, to the best of my knowledge, outside the expertise of Dr. Brunell as well.

14 As an aside, in the process of critiquing my report on the basis of its ignoring the matter of where responsibility for polling place closures in Georgia truly lies, Dr. Brunell writes as follows: “Just like any report about zoning decisions made by local governments would demonstrate anything about other statewide policies.”

15 This passage is somewhat difficult to interpret, but I believe that Dr. Brunell is arguing here that local zoning decisions made in Georgia say effectively nothing about Georgia state policies.¹ This is almost certainly false: I am confident that local zoning decisions made in Georgia have to comply with Georgia state laws, not to mention the Georgia Constitution, United States federal laws, and the United States Constitution. This is the nature of local and state governance in the United States. Thus, local zoning decisions in Georgia do in fact demonstrate what is allowed and not precluded under Georgia state law and under other sets of laws, and I believe that this is contrary to what Dr. Brunell writes in his report.

¹I suspect that the word “not” is missing between the words “would” and “demonstrate.”

3.2 Critique: my original report cites only two articles in the literature on polling places and turnout.

16 Dr. Brunell raises a concern with my original report because it “cites only two peer-reviewed articles. . . to support [its] argument that when a voter is reassigned to a new polling location, the likelihood of voting decreases” (p. 5). Dr. Brunell states that, “There is some evidence [in the two articles] for the proposition at hand in [Herron’s report], though in terms of generalizability we may want to proceed with caution, because these highly specific studies may not be true of voters more generally” (p. 5).

17 I concur with Dr. Brunell that the two cited articles (both of which were published in peer-reviewed journals, as Dr. Brunell himself notes) contain “some evidence,” to use his language. In fact, the articles conclude that changing polling locations can lead to lower turnout, and Dr. Brunell does not contest the articles’ findings.

18 Dr. Brunell’s critique boils down to the assertion that in my original report I “only” cite two peer-reviewed articles in support of my study of the relationship between polling place closures and voter turnout. My response is twofold.

19 First, when I write academic papers, I cite existing literature and describe findings made by others. I do this because science is incremental,

and my research builds on others' results. The precise number of articles that I would cite in any particular venue can vary. If Dr. Brunell is concerned that two articles are insufficient, I would respectfully refer him to a third article, Haspel and Knotts (2005), which is a study of changes in polling places in Atlanta. This peer-reviewed study finds, like the literature cited in my original report, that changes in polling places can affect subsequent voter turnout. Insofar as Haspel and Knotts analyze a city in Georgia, which is the focus of this litigation, any concerns that Dr. Brunell has about the generalizability of the literature on polling places changes and turnout should be assuaged.

20 Second, I cite literature on the relationship between polling place changes and voter turnout to provide context and as a form of acknowledgment that I am not the first person to have studied this subject. Moreover—and perhaps most importantly—even if the cited articles in my original report (plus Haspel and Knotts) did not exist or were themselves fundamentally flawed, the findings in my report would still stand. Dr. Brunell simply does not challenge the findings in the cited work about the potential consequences for voter turnout of polling location changes. Even if he had successfully done so, this would not invalidate my calculations and results, which are valid apart from the fact that they are consistent with existing literature.

3.3 Critique: White registered voters are affected more than Black registered voters by polling place closures in Georgia

21 Throughout his report, Dr. Brunell critiques my original report because of its focus on a minority group in Georgia, namely, Black registered voters in the state. The essence of this critique is that the polling place changes that I identify in my original report are of negligible import because they affect more White registered voters than they do Black registered voters in Georgia, *i.e.*, they affect the majority racial group in Georgia to a greater extent in absolute terms than they affect a minority group.

22 For example, Dr. Brunell writes as follows: “While in four of the five categories [of homogeneous polling places], the Black closure rate is higher than the White closure rate, it is important to note that there are far more White voters affected than Black voters” (pp. 4-5). And, “[W]hile Black voters are affected at a slightly higher percentage than White voters, there are far more White voters affected by reprecincting decisions made at the county level” (p. 5). And most notably, “Prof. Herron concludes by saying that polling place closures were not racially neutral, and I agree, far more White voters were affected by polling place closures than Black voters” (p. 7).

23 Because there are almost twice as many White residents in Georgia as there are Black residents, it is hardly surprising that any set of election administrative rules or procedures will affect more White registrants in absolute terms than Black registrants.² Indeed, a parallel statement applies to all minority populations in Georgia. Changes to election laws in the state will tend to affect more White registered voters than registered voters of other race groups simply by virtue of the fact that Whites are by far the largest racial group in Georgia.

24 Because racial group sizes vary in Georgia (and in other states as well—nothing that I am writing here is unique to Georgia), assessments of the effects of election rules and procedures normalize, or control for, group size. In other words, in my original report I do not limit myself to asking, “How many White registered voters were affected by polling place closures in Georgia in the time frame 2014-2018?” and “How many Black registered voters were affected by polling place closures in Georgia in the time frame 2014-2018?” Rather, I ask in my report, “What *percentage of White registered voters* were affected by polling place closures in Georgia in the time frame 2014-2018?” and “What *percentage of Black registered voters* were affected by polling place closures in Georgia in the time frame 2014-2018?”

²As of July 1, 2019, the Georgia population was estimated to be 10,617,423. Of these, 60.5 percent (approximately 6,423,541) are white and 32.4 percent (approximately 3,440,045) are black). The ratio of 60.5 to 32.4 is approximately 1.87, which explains my use of “almost twice,” above. See “QuickFacts Georgia,” *The United States Census Bureau*, available at <https://www.census.gov/quickfacts/GA> (last accessed April 1, 2020).

The practice of examining percentages of individuals affected, or the rates at which they were affected, controls for differences in the sizes of race-based groups.

25 To illustrate the lack of depth in Dr. Brunell's critique that turns on group sizes, I offer two examples.

26 *Example 1.* As of April 7, 2020, there have been 141,100 cases of the coronavirus in New York (population 19,453,561) and 715 such cases in New Hampshire (population 1,359,711).³ By Dr. Brunell's logic, New York is worse off than New Hampshire with respect to the coronavirus because, simply, 141,100 is greater than 715. In fact, New York is much worse off than New Hampshire with respect to the coronavirus because it has approximately 197 times as many cases of the virus with a population that is only approximately 14 times as large as New Hampshire's. This example shows how a comparison between two types of individuals (here, residents of New York and residents of New Hampshire) depends on the sizes of their respective populations.

³For these virus infection figures, see "States Reporting Cases of COVID-19 to CDC," *Centers for Disease Control and Prevention*, available at <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html> (last accessed April 7, 2020). For the populations of New York and New Hampshire, see "QuickFacts New Hampshire," *The United States Census Bureau*, available at <https://www.census.gov/quickfacts/GA> (last accessed April 1, 2020) and "QuickFacts New York," *The United States Census Bureau*, available at <https://www.census.gov/quickfacts/GA> (last accessed April 1, 2020).

27 *Example 2.* Suppose that a state is divided into ten counties, which are called County 1, County 2, County 3, and so forth. The state contains voting-eligible residents who belong to two groups, A and B. Group A is the majority group with 100,000 total residents who are spread equally across the state's counties. Group B is the minority group with 5,000 residents, all of whom are concentrated in County 1.

28 The government in the hypothetical ten-county state decides that residents of County 1 are not permitted to vote in an upcoming election. Per Dr. Brunell's logic, Group A is heavily penalized because 10,000 of its members (those who live in County 1) now have lost the franchise. In contrast, all 5,000 of Group B's members may not vote. Since 10,000 is greater than 5,000, it follows from Dr. Brunell's accounting that Group A is worse off than Group B, *i.e.*, is penalized more than Group B, by the state's disenfranchising decision regarding County 1.

29 Of course, this conclusion is simply a reflection of the fact that Group B is a minority group whose population is smaller than Group A's. In the scenario I have sketched here, ten percent of Group A has been disenfranchised by virtue of its living in County 1. However, literally 100 percent of Group B has been disenfranchised.

30 Much of my academic work is in the area of American election administration. I cannot imagine that any colleague of mine would argue

that poll taxes can be defended because they affect only a small number of individuals. Similarly, I cannot envision any colleague of mine arguing that the effects of election rules and procedures on distinct groups in a society should be evaluated without controlling for group size. That Dr. Brunell's critique proceeds in this vein I find remarkable, at odds with literally all recognized scholarship on election administration, and the critique should be dismissed outright.

3.4 Critique: small effect sizes suggest that county governments in Georgia are not engaged in systematic, racially discriminatory behaviors

31 Dr. Brunell asserts that the findings about polling place closure rates in my original report are not dramatic enough to indicate that county governments in Georgia are racially discriminatory. In particular, he writes, "The differences between [polling place] closure rates for these two racial groups is not sufficient, in my opinion, to support a conclusion that counties are engaged in systematic, racially discriminatory fashion in terms of decisions they make with respect to where polling places ought to be. Indeed the similarity of the rates of closure suggests that they do not" (p. 6).

32 My response to this critique is twofold.

33 First, my report does not engage the matter of responsibility for the polling place closures documented in it. I have already explained this.

34 Second, my original report describes a lack of racial neutrality in polling place closures. It does not propose a legal standard for evaluating when underlying policies are “racially discriminatory,” to use Dr. Brunell’s language. In his report, Dr. Brunell also sets out no such standard. Accordingly, I do not see a basis for Dr. Brunell’s use of “is not sufficient” in the cited passage above. I would have expected Dr. Brunell’s critique in this vein to be accompanied by an explication of a standard for assessing sufficiency and statistical evidence that speaks to the standard. Absent this, I find Dr. Brunell’s critique about small effect sizes to be without any basis.

3.5 Critique: my original report ignores reasons for why polling places were closed in Georgia

35 Dr. Brunell critiques my original report for not engaging the rationales behind polling place closures. In particular, he writes as follows: “It is important to note there are legitimate reasons for counties to move polling place, open new polling places, and close existing polling places – and Prof. Herron’s analysis does not take any of these potential reasons into account” (p. 7).

36 My response to this critique is twofold.

37 First, my report does not engage the “legitimacy” of any polling place closures, to again use a term offered by Dr. Brunell. This term does not appear in my report. I am not sure what a “legitimate” polling place closure looks like, and Dr. Brunell, in his report, does not offer a definition that would enable me to classify closures as either legitimate or illegitimate. Absent such a definition, I cannot assess the validity of Dr. Brunell’s claim on the existence of legitimate reasons for polling place closures.

38 Second, issues of legitimacy notwithstanding, my report does not engage the rationales for the polling place closures that it documents. These rationales, as I have stated above, are beyond the scope of the report. My report’s findings on polling place closures in Georgia stand independently of the rationales for them.

3.6 Critique: my original report does not take into account the possibility that all types of changes in polling places lead to reprecincting

39 Dr. Brunell critiques my report on the following basis: “It is worth noting that if a county adds new polling places or moves some polling places around but keeps the same number of polling places, both of these scenarios would result in voters being reprecinted (sic). Prof. Herron does not take this into account in his analyses” (p. 7).

40 This statement is erroneous. In paragraph 74 on p. 30 of my report, I state as follows: “Henceforth, when I state that a given Georgia polling place closed between the 2014 and 2018 General Elections, this means that the address for the polling place used in 2014 does not appear in the list of polling place addresses from 2018.”

41 This statement makes it clear that my report does what Dr. Brunell asserts that it does not. Invoking Dr. Brunell’s scenario, if a set of polling places are given new locations holding fixed the total number of polling places, all of the former places will be treated in my analysis as having been closed. The reason that my original report presented a clear definition (see paragraph 74 on p. 30) of a polling place closure was so that readers of the report would understand the basis for my asserting that a given Georgia polling place closed.

42 With respect to Dr. Brunell’s critique and my definition of a closed polling place, I would also note that, if after the 2014 General Election additional polling places had been added in Georgia to the set of existing polling places in the state as of November 2014 and in addition no polling place was shut down, I would not conclude that any polling places in the state closed as of 2018. This is because a closed polling place as I define it is one whose address was used in 2014 but not used in 2018.

43 Finally, Dr. Brunell does not present any data on the number of polling places that were added in Georgia between 2014 and 2018. He also does not present any data on the number polling places that “moved around,” to paraphrase his language above.

3.7 Critique: my original report’s results using proportions are inconclusive

44 Dr. Brunell critiques my original report’s results that depend on proportions as being inconclusive. He writes as follows: “Prof. Herron concludes by saying that polling place closures were not racially neutral, and I agree, far more White voters were affected by polling place closures than Black voters. If we restrict our analyses strictly to proportions, Prof. Herron’s analyses are inconclusive. There are some metrics in which the proportion of Black voters is slightly higher than White voters, although the reverse is true as well” (p. 7).

45 As far as I am concerned, essentially all of my original report’s key results rely on proportions, which means that I interpret Dr. Brunell’s critique as a generic one that applies to the report overall.

46 Why does Dr. Brunell single out “proportions” in the passage above? The reason is that, according to Dr. Brunell, the effect of polling place closures in Georgia should be analyzed by studying the total number of White

registered voters in the state affected by such closures and comparing this to the total number of Black registered voters so affected. My reliance on proportions—*i.e.*, my analysis of the *percentage* of Whites affected by polling place closures in Georgia and the corresponding *percentage* of Blacks affected by polling place closures in the state—is a weakness, per Dr. Brunell.

47 I have already noted that comparing total numbers of White registered voters affected by polling place closures in Georgia to total numbers of Black registered voters is confounded and rendered trivial by the fact that Georgia has more White residents than Black residents. Because of this, any analysis of White and Black registered voters in Georgia must control for group size differences, which my report does in its “proportions” calculations, meaning in essentially all of its calculations.

48 Now turning to the proportions results that Dr. Brunell does not value, these results are grounded in a series of complementary analyses of polling place closures. Bringing different perspectives to a single problem reflects a strategy known as triangulation.

49 With respect to the matter of whether Black registered voters were disproportionately affected by polling place closures compared to White registered voters, the proportions-based results in Table 3 (p. 53), Table 5 (p. 55), Table 7 (p. 56), and Table 9 (p. 61) all point in the same direction. Dr. Brunell has not disputed the underlying calculations supporting these

tables, the computer code that generated them, or the accuracy of the data on which they are based (although he did raise the question about whether the closures I identified are “legitimate,” but without an explanation of what this means, I cannot respond to this concern). Accordingly I do see any basis for Dr. Brunell’s referring to my report’s proportions-based results as “inconclusive.”

50 Given the seriousness of this charge, I would have expected Dr. Brunell to have carefully gone through my results and to have explained in detail why some results show that White registered voters were disproportionately affected by polling place closures in Georgia and other results, the opposite. Dr. Brunell did not do this, which undermines his charge that my results are inconclusive.

4 Response to the Thornton Report

51 I now turn to the Thornton Report and the critiques that it levels at my original report. By my accounting, there are nine such critiques.

4.1 Critique: decisions about polling place closures in Georgia are made by counties

52 The first critique leveled by Dr. Thornton against my report parallels a critique offered by Dr. Brunell, namely, that my report should not be

reporting Georgia-wide statistics but instead should have focused on county-level results. On this point, Dr. Thornton writes, “[P]roviding statistics in aggregate across the State of Georgia, as Dr. Herron does, is contrary to the [Georgia] statute that dictates that it is the county and not the state that makes decisions regarding the closure and placement of polling places” (p. 7, paragraph 21).

53 My response to this critique of Dr. Thornton is identical to my response to the same point made by Dr. Brunell. To recapitulate, my report says nothing about the individuals or institutions in Georgia that promulgated the decisions that led to the polling place closures and changes that I document. This matter is outside of the scope of my report. The report also says nothing about the intentions of the individuals who collectively staff these institutions. The matter of intentions is also outside the scope of my report.

54 The identities of the bearers of legal responsibility for the polling place closures and changes that took place in Georgia following *Shelby County* have nothing to do with the empirical findings that my report describes. Put another way, my original report seeks to document what has happened in the past several years in Georgia regarding polling place changes, and the statistical exercises in the report stand on their own independently of the identities of the decision makers behind the polling place changes described therein.

55 I noted as well in my response to Dr. Brunell that jurisdictions within states must operate with a legal framework established by state law and one that is consistent with a state’s constitution (and local jurisdictions in Georgia are also subject to federal law and the United States Constitution). For this reason alone, there is nothing problematic about analyzing election administration practices within a state.

4.2 Critique: polling place closures may occur for various reasons, some of which are beyond the control of Georgia county Boards of Elections

56 In her report, Dr. Thornton argues that the polling place closures documented in my report “could have occurred for numerous reasons” (p. 7, paragraph 23). Dr. Thornton states as well that “a polling place may be closed because the facility no longer wishes to serve as a polling place. . . and some polling places are physically closed or torn down and, therefore, are no longer available to serve as a polling place” (pp. 7-8, paragraph 23). Dr. Thornton also avers that reasons for polling place may not be “under the control of. . . [Georgia] county Boards of Elections” (pp. 7-8, paragraph 23). Following these assertions about the extent to which my report ignores the reasons that polling places closed in Georgia between 2014 and 2018, Dr. Thornton offers as ostensibly problematic examples three polling place structures that existed in 2014 and were thereafter torn down, are allegedly

going to be demolished, or are closed.

57 My response to Dr. Thornton's critique about the reasons behind polling place closures in Georgia is fourfold.

58 First, to the extent that the critique turns on decisions made by members of County Boards of Elections, it is not germane. My report does not engage the individuals and institutions responsible for the polling place closures documented in it, and the report does not assert anything about County Boards of Elections nor about the Georgia Secretary of State. Rather, my report examines the extent to which polling places in Georgia were closed between the years 2014 and 2018, and it does not engage the matter of who was legally responsible for these closures. Therefore, whether any aspect of the polling place closures that my report documents was, or was not, under the control of a given county Board of Election or even multiple Boards of Election is not germane to the report's conclusions.

59 Second, Dr. Thornton's critique about varying rationales behind polling place closures, and her adducing three example closures, does not reveal anything systematic. Dr. Thornton, for example, has not estimated a rate at which polling places in Georgia were subject to demolition between the years 2014 and 2018, and Dr. Thornton does not present evidence suggesting that rates of polling place demolition were different in heavily Black

areas as opposed to heavily White areas in Georgia.⁴ Dr. Thornton does not even offer any reasons to think that this might be the case. Moreover, Dr. Thornton does not offer any estimates of the rate at which polling place structures in Georgia that, based on their physical conditions, could plausibly have been demolished were instead maintained and/or renovated.

60 Instead of offering a rigorous analysis of the rationales for the 459 polling place closures in Georgia between 2014 and 2018 that I document in my report, Dr. Thornton presents selective evidence. When evidence is chosen selectively, it cannot in general be used to draw conclusions that apply systematically.

61 For the purposes of understanding the rationale for the polling place closures in Georgia, Dr. Thornton should have sampled polling places as of 2014 at random, reported how many she examined, and then reported how many polling place structures were torn down, how many are presently slated for demolition, how many have been maintained despite poor physical conditions, how many have been renovated, and so forth. Dr. Thornton could also have studied all polling places as opposed to sampling randomly from them.

⁴As an aside, if it were true that schools in predominantly Black areas of Georgia were being torn down at rates greater than comparable schools in predominantly White areas (one of the example polling places mentioned on p. 8, paragraph 24, of the Dr. Thornton report is a school), this might raise a different set of questions, all of which are beyond the scope of my original report.

62 Rather than pursuing a research design like this, Dr. Thornton does not explain in her report how she selected her three example polling locations. I noticed (p. 8, paragraph 24) that all three are located in heavily Black areas in Georgia. Is that by design, meaning, did Dr. Thornton examine polling places in Black areas, looking for structures that were demolished? How many polling places did Dr. Thornton have to consider until she found three in heavily Black areas to describe? How many structures did she examine in heavily White areas? These are all important questions because they shed light on the extent to which Dr. Thornton's three example locations may be representative of closed polling locations in Georgia. Since Dr. Thornton did not provide any details of how she sampled polling locations for analysis, I cannot address any of the questions noted above.

63 Continuing in this vein, I am unable to ascertain if, for the purposes of her report, Dr. Thornton reviewed visual evidence on numerous Georgia polling places (like the evidence appearing on p. 9 of her report) yet presented evidence on only three of them. That would be very different than reporting physical information on a random sample of polling places or, ideally, on all of the polling places that existed in Georgia as of 2014.

64 Because Dr. Thornton's evidence on polling place demolition is selective as opposed to systematic and rigorous, there is no information in her report on the extent to which structure demolishing rates vary across Georgia, if they vary at all. Dr. Thornton's report also does not offer any evidence

about variance in building quality in White and Black areas in Georgia, something that is presumably correlated with rates of building demolition. If, to be clear, structures in predominantly White areas in Georgia are more substantial than those in predominantly Black areas in the state, one would expect to observe higher rates of building turnover (*i.e.*, demolition) in the latter. Of course this is speculative; I have no evidence on systematic polling place building quality differences across Georgia. Based on her report, Dr. Thornton likewise has no evidence on this point, further illustrating how non-systematic her evidence on polling place demolition truly is.

65 Third, Dr. Thornton's critique that I have described above is dependent in part on visual evidence of polling place demolition. While it is relatively easy to spot buildings that have been torn down, it is more difficult to find evidence of buildings that were renovated or buildings that could have been torn down based on poor physical condition but were not. Dr. Thornton does not offer a research design that could address this issue. Without sampling and classifying polling place buildings on the basis of their physical status, Dr. Thornton will be unable to understand if there is a difference between the probability that a polling place structure in a heavily White area is torn down versus the probability that a polling place structure in a heavily Black area is torn down.

66 Fourth, and perhaps most importantly, whatever the reason for the closure of a polling place, my report's objective was understanding the extent

to which White and Black registered voters in Georgia received new polling places in the post-*Shelby County* period. A voter in Georgia who is forced to use a new polling location because her prior location was demolished is in the same situation as a voter who is forced to use a new polling location because her prior location was changed for reasons other than building demolition. This is ultimately why my report is agnostic about why polling locations in Georgia closed between the years 2014 and 2018. Accordingly, the calculations described in my report, which show that Black registered voters disproportionately received new polling locations between 2014 and 2018, do not depend in any way on precisely why any individual in Georgia might have received a new polling place between 2014 and 2018.

4.3 Critique: my report’s statistics are “inflated” because of a failure to contend with different reasons for polling place closures

67 Dr. Thornton argues that my report’s conclusions are “inflated” because they ignore the reasons that polling locations closed in Georgia between 2014 and 2018. In particular, she states that, “Dr. Herron . . . has inflated his statistics regarding closure rates due to [a] failure [to address different reasons for polling place closure]” (pp. 7-8, paragraph 23). While this critique is a continuation of the previous one, wherein Dr. Thornton writes negatively of the fact that my report does not engage the rationales behind polling place

closures in Georgia, the charge of “inflated” results is serious enough for me to treat this particular critique as separate.

68 There are two reasons that the critique is not compelling.

69 First, my report literally counts polling place closures in Georgia between the years 2014 and 2018, and Dr. Thornton does not dispute the accuracy of any of my counts or the computer code that supports them. I would like to think that Dr. Thornton would not object to my classifying demolished polling places as closed (how could a demolished polling place remain open?), although I am not entirely confident about this.⁵

70 That said, independent of the number of polling places in Georgia that were demolished between 2014 and 2018, none of the polling places that I treat as closed was actually open in the 2018 General Election. Dr. Thornton does not suggest otherwise in her report. From this it follows that my counts, which are statistics, of closed polling places in Georgia are accurate and, more to the point, not inflated.

⁵My lack of confidence stems from the text of footnote 20 on p. 13 of Dr. Thornton’s report. In this footnote, which is a reference to a statement about variation across Georgia in closed polling place rates, Dr. Thornton offers the caveat, “Again, using Dr. Herron’s definition of a closure which includes movement of precincts due to building demolitions, etc” (p. 13). Notwithstanding that the subject of my report is closed polling places and not closed precincts, in my opinion this footnote does raise the question as to whether Dr. Thornton would treat a demolished polling place as one that is closed. Still, I move forward assuming that Dr. Thornton would do so.

71 I will phrase this another way. To make a compelling case that my original report's count (459) of closed Georgia polling places is inflated, Dr. Thornton would have had to find a polling location that I wrongly classified as closed. Dr. Thornton does not in her report identify any such polling place.

72 Second, let us suppose that Dr. Thornton were to argue that demolished polling places are different than other closed polling places and should not be counted as closed. I am not sure how Dr. Thornton would justify such an argument, but I am willing to accept this possibility as a hypothetical thought experiment.

73 In this case, some of the demolished polling places in, for example, predominantly White areas of Georgia should not be treated as closed and some of the demolished polling places in predominantly Black areas of Georgia should not be treated as closed. What is key, however, to understanding whether polling place closures in Georgia between 2014 and 2018 were racially neutral is not the absolute rates of polling place closures in White and Black areas of Georgia but rather the *difference* between these two rates. Therefore, if demolished polling places in Georgia should not be treated as closed, as Dr. Thornton might suggest, I would expect this to wash out of the difference between White and Black polling place closure rates. Consequently, race-based differences between polling place closures rates in Georgia can be accurate even if demolished polling places should not be treated as closed.

And, this implies that Dr. Thornton’s critique about my statistics being “inflated” misses the point. In the scenario described here, differences in rates, which are statistics, would be accurate and not inflated.

4.4 Critique: the 2016 General Election confounds my analysis of the turnout in the 2018 General Election

74 Among other things, my original report analyzes voter turnout in the 2018 General Election in Georgia and in particular compares turnout rates of two groups of registered Georgian voters, those who received new polling places between 2014 and 2018 and those who did not. My results in this vein show that Georgia registrants who received new polling places in the period 2014-2018 were less likely to vote in the 2018 General Election than those who did not. Tables 10-13 in my original report contain relevant results, which break down 2018 voter turnout by racial group.

75 These tables show that the 2018 General Election turnout rates of Black registrants in Georgia were more affected by polling place closures than the 2018 turnout rates of White registrants. This result does not hold for election day turnout in the 2018 General Election, however. Regarding election day voting in particular, White registrants in Georgia were more affected (or “disenfranchised,” to use Dr. Thornton’s term which appears on

p. 18 of her report) than were Blacks. Dr. Thornton comments at length in her report on this particular finding, and I return to it in the following section, where I argue that focusing on election day turnout in 2018 is inappropriate and that our focus should instead be on the consequences of polling place closures and changes on overall voter turnout. For the moment, though, I put to the side the matter of overall turnout versus election day turnout.

76 Dr. Thornton critiques my 2018 General Election turnout analysis with the following: “[I]t is likely that voters whose polling place (sic) changed prior to the 2016 election and who then voted in 2016 would have known of their new polling place (sic) at least two years prior to the 2018 election” (pp. 11-12, paragraph 27). While I cannot comment on the extent to which Dr. Thornton’s use in this sentence of “likely” is accurate, I address her critique of my turnout analysis below.

77 The essence of Dr. Thornton’s critique is that the 2016 statewide election in Georgia confounds my ability to analyze 2018 General Election turnout based on polling place changes that were promulgated between the years 2014 and 2018. In other words, the 2016 General Election is a complicating factor in any analysis that spans 2014-2018, and this is because it occurred in the middle of this time window.

78 My response to this critique of Dr. Thornton is to eliminate the role of the 2016 General Election as an intervening election in my voter turnout

analysis, and I now explain how I accomplish this.

79 In what follows, I take the voter turnout analysis in my original report and break it into two pieces. In particular, I analyze turnout in the 2016 General Election in Georgia based on polling place changes in the state that took place between 2014 and 2016, and subsequently I analyze turnout in the 2018 General Election based on polling places that took place between 2016 and 2018. By breaking my original turnout analysis that spanned four years into two analyses, each of which spans two years, I eliminate the confounding role of a potentially intervening statewide election, one which took place the middle of the period in which the polling place closures that I analyze in my original report occurred. In my new turnout analyses—there are two of them, which can be thought of as collectively replacing the one analysis that Dr. Thornton critiques—Dr. Thornton’s concern no longer applies.

80 To transition my original turnout analysis so that it considers 2014-2016 and 2016-2018 polling places changes in Georgia and thus responds to Dr. Thornton’s critique, I need to leverage polling place location data in the 2016 voterfile produced by the State during discovery. I discussed this voterfile on p. 20 of my original report. Previously I did not need to use polling place location data from the 2016 voterfile because my original report defines a closed polling place in Georgia as one that existed in 2014 but was not used in 2018 (for this definition, see paragraph 74 on p. 30 of my original report). Now, however, I generate two lists of closed polling

places in Georgia. One consists of polling places that were used in the 2014 General Election but not in the 2016 General Election, and a second consists of polling places that were used in the 2016 General Election but not in the 2018 General Election.

81 Parallel to my original report, I define a polling place that existed in 2014 as closed in 2016 if its physical address was in use in the 2014 General Election but not in the 2016 General Election. I find 264 polling places that closed in Georgia between 2014 and 2016. I carry out a similar exercise for polling places that were used in the 2016 General Election but not in the 2018 General Election, and I find 250 such polling places.

82 I now turn to the method I used in my original report to identify individuals who did not move between 2014 and 2018; see Section 4.6 on pp. 31-33 of my original report. This method compares voters' residential addresses across time, and in her report Dr. Thornton did not critique this method for identifying non-movers. That said, I identify all registered voters in Georgia in 2014 who did not move between 2014 and 2016, and in addition I identify all registered voters in Georgia in 2016 who did not move between 2016 and 2018.

83 In my analysis of turnout in 2016, I focus on registered voters who did not move between 2014 and 2016 ("non-movers"). This is because any individual who moved in this time period might receive a new polling place

by virtue of moving. Similarly, in my analysis of turnout in 2018, I focus on registered voters who did not move between 2016 and 2018. My original report focuses on non-movers as well, and this is explained in paragraph 144 on p. 57.

84 Lastly, I can only analyze the matter of whether a registrant in Georgia received a new polling place between the years 2014 and 2016 for individuals in Georgia who were registered to vote in both November 2014 and November 2016. A similar statement applies to the years 2016 and 2018. In my original report, when I analyzed voter turnout in the 2018 General Election as a function of the extent to which a registered voter received a new polling place in the time period 2014-2018, I restricted attention to individuals who were registered to vote in Georgia in 2014 and also in 2018.

4.4.1 Voter turnout in the 2016 General Election

85 I identify 4,964,140 individuals in Georgia who were registered to vote in 2014 and 2016 and did not move in this time period.⁶ Of these, there are 497,131 who received new polling locations between 2014 and 2016 and 4,467,009 did not.

⁶These counts of individuals exclude the very small number of registered voters for whom I cannot determine a polling place in 2014 or 2016. This practice is parallel to one that I used in my original report. The reason that there are any individuals for whom I cannot determine polling places is, I suspect, due to minor data coding errors in the voterfiles that I use for my analysis.

86 Using the State's voter history file for the 2016 General Election (see Section 4.2, pp. 24-25, of my original report for a discussion of these files), I can determine which of the registered voters in Georgia voted in 2016, and this allows me to calculate the 2016 General Election turnout rate for the non-moving, Georgia registered voters who received new polling locations between 2014 and 2016. I can also calculate the 2016 General Election turnout rate for the non-moving, Georgia registered voters who did not receive new polling locations between 2014 and 2016. These two turnout rates are approximately 57.7 percent and 60.6 percent, respectively. In other words, receiving a new polling place between 2014 and 2016 is associated with a voter turnout drop in the 2016 General Election of approximately 2.9 percentage points.

87 I now restrict attention to registered voters who participated in the 2014 General Election. There are 2,228,351 of these individuals, of whom 212,063 received new polling places between 2014 and 2016 and 2,016,288 did not. Their 2016 General Election turnout rates are approximately 91.5 percent and 92.4 percent, respectively. In other words, among Georgia registered voters who demonstrated their political engagement by voting in the 2014 General Election, receiving a new polling place between 2014 and 2016 is associated with a voter turnout drop in the 2016 General Election of approximately 0.9 percentage points.

88 It is intuitive, I would argue, that 2014 voters were less affected in the 2016 General Election by new polling places than individuals who did

not vote in 2014. Treating voting in the 2014 General Election as a proxy for political engagement, this suggests that the disruption caused by a voter's receiving a new polling place is felt most greatly by individuals who are the least politically engaged.

89 Insofar as my original report's objective was assessing the racial neutrality of polling place closures in Georgia in the post-*Shelby County* period, I disaggregate the above results on 2016 General Election turnout by race. This yields two tables that are parallel to two of the results tables in my original report, in particular to Tables 10 and 11. These two tables in my original report covered the period 2014-2018, however, and Dr. Thornton critiqued them because the 2016 General Election occurred during this time window. The results tables, below, are not subject to this critique.

Table 1: 2016 General Election turnout by race as a function of 2014-2016 polling place changes

Race	2014 voters	New place	Not new	Difference
White	2,899,908	64.15	66.07	-1.92
Black	1,460,055	53.01	55.40	-2.40
Unknown	370,389	42.83	45.51	-2.68
Hispanic	97,924	42.68	46.04	-3.36
Asian/Pacific Islander	78,791	47.22	47.73	-0.52
Other	54,206	43.90	46.82	-2.92
American Indian/Alaskan	2,526	41.73	43.10	-1.38

90 Table 1 reports 2016 General Election turnout rates, by racial group, for non-moving Georgia registered voters who appear in both the 2014 and

2016 voterfiles.⁷ According to this table, among White registered voters, receiving a new polling place is associated with a turnout probability drop of approximately 1.9 percentage points. For Black registered voters, the corresponding turnout drop is approximately 2.4 percentage points. Key to this table is the fact that all of the entries in the “Difference” column are negative, indicating that receiving a new polling place in the time period 2014-2016 is associated with lower voter turnout in the 2016 General Election, and the fact that the Black difference in Table 1 is greater in magnitude than the White difference.

Table 2: 2016 General Election turnout by race as a function of 2014-2016 polling place changes, 2014 voters only

Race	2014 voters	New place	Not new	Difference
White	1,441,680	92.74	93.36	-0.62
Black	621,173	90.11	91.11	-1.00
Unknown	109,053	87.33	88.34	-1.02
Hispanic	21,772	88.60	88.81	-0.21
Asian/Pacific Islander	18,155	87.71	89.21	-1.50
Other	15,853	88.62	88.77	-0.15
American Indian/Alaskan	586	87.93	84.47	3.46

91 Table 2 contains similar results but includes only those Georgia registered voters who voted in the 2014 General Election. I use this as a proxy for being politically engaged.

⁷This table, like others in this report and in my original report, ignores the very small number of Georgia registered voters who have erroneous race codes in the various voterfiles on which my results rely. The numbers of such individuals are minuscule, and neither the results in this report nor in my original report depend on them.

92 Per Table 2, for all race groups except American Indians/Alaskans, receiving a new polling place in the time period 2014-2016 is associated with lower voter turnout in the 2016 General Election. Moreover, the Black difference (approximately one percentage point) in Table 1 is greater in magnitude than the White difference (approximately 0.6 percentage points), implying that Black registered voters were affected more than White registered voters by polling place closures in Georgia in the period 2014-2016.

93 My results on 2016 General Election voter turnout are qualitatively similar to the results in my original report that analyzed voter turnout in the 2018 General Election as a function of the extent to which registered voters in Georgia received new polling places in the 2014-2018 time period. Dr. Thornton was critical of those results, however, because of the intervening 2016 General Election. I have taken Dr. Thornton's critique seriously, and my results on turnout in the 2016 General Election reflect this. These results are not subject to the critique that Dr. Thornton raised, and this is because the 2016 General Election is the endpoint—and not an intervening point—for the analysis described above.

4.4.2 Voter turnout in the 2018 General Election

94 I now turn to voter turnout in the 2018 General Election. Rather than asking whether turnout in this election was affected by the extent to which registered voters in Georgia received new polling places in the window 2014-

2018, I instead consider whether turnout in the 2018 General Election reflects polling place changes in the window 2016-2018. This change in time windows is in accordance with my response to Dr. Thornton, as I have detailed above.

95 I carry out essentially the same calculations for the 2018 General Election as I did for the 2016 General Election. When I analyze the 2018 General Election here, however, I use voting in 2016 as a proxy for political engagement. I had previously used voting in the 2014 General Election as a proxy in this way.

96 I identify 4,833,423 non-moving registered voters in Georgia who appear in the 2016 and 2018 voterfiles. Of these, there are 520,184 who received new polling locations in the 2016-2018 time window and 4,313,239 who did not.

97 Among those who received new polling places, approximately 61.2 voted in the 2018 General Election. Of those registered Georgians who did not receive new polling places, approximately 62 percent voted in the 2018 General Election. Therefore, receiving a new polling place between 2016 and 2018 is associated with a voter turnout drop in the 2018 General Election of approximately 0.8 percentage points.

98 Restricting attention to the 3,412,578 registered voters in Georgia who voted in the 2016 General Election, there are 364,101 who received

new polling places in the time period 2016-2018 and 3,048,477 who did not. Turnout rates for these two groups of registered Georgians are approximately 81.4 percent and approximately 82 percent, respectively. From this it follows that, among politically engaged registered voters in Georgia, receiving a new polling place between 2016 and 2018 is associated with a voter turnout drop in the 2018 General Election of approximately 0.6 percentage points.

99 This percentage point gap is smaller than the 0.8 percentage point gap associated, above, with the drop in 2018 General Election turnout when comparing all registered voters who received new polling places in the time frame 2016-2018 with all of those who did not. As I noted earlier in my analysis of voter turnout in the 2016 General Election, this result suggests that the disruption caused by a voter's receiving a new polling place is felt most greatly by individuals who are the least politically engaged.

100 I now disaggregate my 2018 General Election turnout rates by race. This yields Tables 3 (all non-moving registrants in Georgia who were in both the 2016 and 2018 voterfiles) and 4 (all non-moving registrants in Georgia who were in both the 2016 and 2018 voterfiles and who voted in the 2016 General Election). These two tables are analogous to Tables 1 and 2, above.

101 Table 3 shows that, for non-moving White and Black registered voters in Georgia, receiving a new polling place in the period 2016-2018 is associated with a drop in 2018 General Election turnout. For White regis-

Table 3: 2018 General Election turnout by race as a function of 2016-2018 polling place changes

Race	2014 voters	New place	Not new	Difference
White	2,788,962	65.58	66.19	-0.60
Black	1,394,607	58.20	60.45	-2.24
Unknown	387,959	48.20	46.84	1.36
Hispanic	112,315	46.27	47.09	-0.82
Asian/Pacific Islander	89,874	49.67	48.78	0.89
Other	55,569	49.39	50.59	-1.20
American Indian/Alaskan	3,862	40.87	43.12	-2.25

tered voters, the drop is approximately 0.6 percentage points, and for Black registered voters, approximately 2.2 percentage points. For five of the seven race groups in the table, receiving a new polling place in 2016-2018 is associated with lower 2018 turnout, but the opposite obtains for individuals of unknown race and Asian/Pacific Islanders. Lastly, Table 3's effect for Black registered voters is greater in magnitude than the associated effect for White registered voters, suggesting that Black registered voters are more disrupted than White registered voters by polling place changes.

Table 4: 2016 General Election turnout by race as a function of 2014-2016 polling place changes, 2016 voters only

Race	2014 voters	New place	Not new	Difference
White	2,116,840	82.43	83.04	-0.61
Black	916,050	82.08	83.39	-1.32
Unknown	220,282	75.83	74.76	1.07
Hispanic	69,313	67.86	68.35	-0.49
Asian/Pacific Islander	54,287	71.33	70.70	0.63
Other	33,483	73.48	74.96	-1.48
American Indian/Alaskan	2,210	65.35	65.59	-0.24

102 Restricting attention to individuals who voted in the 2016 General Election (recall, I use this as a proxy for political engagement), Table 4 has similar results to the previous Table 3. Namely, both White and Black registered voters appear negatively affected by polling place changes made from 2016 to 2018 in that turnout rates in November 2018 were lower for members of these two race groups who received new polling places. Moreover, the effect was greater on Black registered voters than White registered voters, and this result follows from the fact that -1.32 is greater in magnitude than -0.61.

4.4.3 Concluding thoughts based on 2016 and 2018 turnout

103 In this section of the report, I have responded to a critique leveled by Dr. Thornton against the analysis of voter turnout in the 2018 General Election that appears in my original report. The analysis concerning Dr. Thornton presented evidence that both White and Black registered voters in Georgia who received new polling places in the time period 2014-2018 had lower turnout rates in the 2018 General Election than White and Black registered voters in Georgia who did not receive new polling places in this time period.

104 As I have reviewed above, Dr. Thornton critiques my analysis of 2018 General Election turnout on the basis of the timing of the 2016 General Election, namely, in the middle of the 2014-2018 during which 459 polling

places in Georgia were closed. Dr. Thornton argues, essentially, that the 2016 General Election confounds my analysis of turnout in the 2018 General Election.

105 I have responded to Dr. Thornton by effectively removing the 2016 General Election from the middle of the time period that I analyze. I do this by offering two complementary analyses of voter turnout, one of turnout in the 2016 General Election (based on polling place changes 2014-2016) and one of turnout in the 2018 General Election (based on polling place changes 2016-2018).

106 My two analyses described above have qualitatively identical results: White registered voters in Georgia who received new polling places had lower turnout rates than those who did not receive new polling places; Black registered voters in Georgia who received new polling places had lower turnout rates than those who did not; and, the drop in turnout rates associated with receiving a new polling place was greater for Black registered voters than for White registered voters.

107 These results on the relationship between polling place changes and voter turnout are also qualitatively the same as those in my original report. That is to say, the voter turnout results that I describe here have the same implications as those that were critiqued by Dr. Thornton. Far from weakening my original conclusions, this supplemental analysis of voter turnout demon-

strates the soundness of the relationship between polling place changes and turnout across multiple elections between 2014 and 2018.

4.5 Critique: many Georgians vote absentee or via early voting

108 In the previous section of this report, I noted that Dr. Thornton critiques my voter turnout analysis in part by arguing that it misleadingly focuses on whether registered voters who received new polling places prior to an election voted in the election and not on whether these individuals voted on election day in the election. I wrote, earlier, that I would return to this point, and I do so now.

109 Dr. Thornton states in her report (p. 16) that in the 2018 General Election more Georgians voted by mail and via early voting than they did in the period surrounding the previous 2014 General Election. I do not dispute this assertion, which is based on figures collected by the United States Election Assistance Commission (EAC).

110 With 2014 and 2018 absentee, early voting, and election day voting rates as background, Dr. Thornton asserts the following: “Dr. Herron fails to consider the influence of this shift [away from Election Day voting] on the decisions made by counties to move or close election day polling places” (p. 16).

111 I respond to this critique in several ways.

112 First, although Dr. Thornton does not articulate an explanation as to why my failing to consider how Georgia voters cast their ballots is ostensibly problematic, I suspect she has in mind an argument as follows. If Georgia voters over time move away from election day voting, it is natural for the state to have fewer election day polling places.

113 Even if this position were to hold, it would not explain why, for example, polling places in heavily Black areas of Georgia were closed at rates greater than those in heavily White areas of Georgia. It would not explain as well why Black registered voters in Georgia had a greater likelihood in 2014 of having a closed polling place than White registered voters in 2014. Keeping in mind that my original report seeks to understand whether polling place closures in Georgia in the post-*Shelby County* period were racially neutral, key to the report are *differences* between White and Black registered voters in the manner that polling places closed in Georgia in the time period 2014-2018. I see nothing in Dr. Thornton's critique about my original report's ostensible failure to consider a temporal shift (2014 to 2018) in absentee and early voting that would bias any of the race-based differences that appear in my original report.

114 Second, Dr. Thornton's critique about election day, absentee, and early voting is practically circular. The EAC statistics that Dr. Thornton

cites in her Table 2 are from the 2014 and 2018 General Elections. Those are in fact the only two elections covered in the table. However, the polling place closures that I document in my original report took place *before* the 2018 General Election.

115 The significance of this point is as follows. One might imagine that, the fewer polling places available to registered Georgia voters, the greater the number of registered voters who do not vote on election day, all things equal. If this holds, then Dr. Thornton's Table 2 may be a reflection of the types of polling place closures described in my original report. From this perspective, it is not the case that my report "fails to consider" an ostensible shift in Georgia away from election day vote, as Dr. Thornton asserts. Rather, the report provides a potential explanation for the voting method changes noted by Dr. Thornton in her Table 2 that occurred between 2014 and 2018.

116 Third and finally, critiquing my report for "fail[ing] to consider" one aspect of Georgia election administration, namely, the rates at which registered voters in the state cast election day, early, and absentee ballots, is not compelling absent logic explaining why an ostensible "failure to consider" would lead to biases in my report's results. In fact, Dr. Thornton does not explain which of my report's conclusions might be suspect on the basis of the ostensible failure that troubles her. If Dr. Thornton is going to level a critique against my report, I would have expected to see an explanation in this vein.

4.6 Critique: non-election day voters are not impacted by changes in polling places

117 What appears to be a serious critique leveled by Dr. Thornton against my original report appears in the end of her report, specifically on pp. 16-17. In particular, Dr. Thornton argues in these pages that my analysis of turnout in the 2018 General Election is “misleading” because it does not exclude individuals who cast absentee and early ballots in the 2018 General Election. She goes on to say that my “Tables 10 and 11 are curious because they appear to include those who voted early and/or submitted absentee ballots” (p. 16, paragraph 37). Implicit in this critique put forth by Dr. Thornton is the idea that the only potentially downstream effect of closed polling places is on election day turnout and that, if registered voters in Georgia respond to closed polling places by voting absentee or early, said polling place closures are not problematic.

118 This critique is fundamentally flawed.

119 First, the premise of the argument does not make sense. Consider this statement by Dr. Thornton: “[Absentee and early] voters would not be impacted by a change in polling place because early voting places and submitting an absentee ballot have no relationship to the election day polling place of a voter” (p. 16, paragraph 37). I am concerned that Dr. Thornton appears not to recognize that a voter who casts an absentee or early ballot

might be doing so precisely because of polling place closures. In the context of the 2018 General Election, registered voters in Georgia whose polling places closed were faced with the choice of voting absentee, early, or on election day. The premise of Dr. Thornton's argument would make sense only if one were to assume *a priori* that a voter's decision as to whether to cast a ballot on election day is independent of, *i.e.*, has literally nothing to do with, whether the voter's polling place has closed. When polling places close, the cost of voting on election day increases. Accordingly, it seems absurd to propose, as Dr. Thornton does, that voters' decisions as to how to cast their ballots (absentee, early, or on election day) have nothing to do with the closures of their polling places.

120 Second, not all forms of voting are equal. Implicit in Dr. Thornton's statement that non-election day voters in Georgia are not impacted by changes in polling places is the notion that, as long as a Georgia registered voter was able to cast a ballot in the 2018 General Election, it does not matter when or where this occurred. This premise would hold if voting early and voting absentee are perfect substitutes for voting on election day. They are not perfect substitutes, and my reasoning for this point is as follows.

121 Individuals who cast their ballots in an early voting period have less information about the election in which they are participating than do individuals who vote on election day. This is self-evident. If a voter casts a ballot one week before an election, and in the intervening week a political

development casts new light on some of the candidates running for office, the voter will not have the chance to act on this information. An election day voter will, however.

122 In addition, an early voter can cast a ballot for a candidate that, by election day, has withdrawn his or her name from consideration. This is not merely a hypothetical concern. In the 2020 Democratic Presidential Primary, approximately four million voters in the states of California, Colorado, Texas, and Utah cast their ballots *before* three prominent candidates withdrew from the Primary.⁸

123 For these two reasons, early voters face a disadvantage compared to election day voters. The same applies to absentee voters. Namely, individuals who cast absentee ballots prior to an election have less information about the election in which they are participating than do individuals who vote on election day. And given the timing of absentee voting, an absentee voter can cast a ballot for a candidate that, by election day, has withdrawn his or her name from consideration.

124 An additional aspect of absentee voting that distinguishes this form of voting from election day voting is that mailed, absentee ballots can be

⁸See “Millions voted early — and some wasted their ballots on candidates who quit,” *NBC News*, March 3, 2020, available at <https://www.nbcnews.com/politics/2020-election/millions-voted-early-some-wasted-their-ballots-candidates-who-quit-n1148646> (last accessed April 3, 2020).

rejected if a voter's signature does not match a signature on file with election officials.⁹ Signature matching and the potential of ballot rejection are not facets of election day voting. The matter of rejected absentee ballots is beyond the scope of this Supplemental Expert Report, and I note it here only in response to Dr. Thornton's positing that early and absentee voting can substitute for election day voting.

125 I have argued above that there are distinct disadvantages associated with early and absentee voting. In particular, these forms of voting expose voters to risks that do not exist on election day. This explains my statement, above, that not all forms of voting are equal.

126 Because all forms of voting are not equal, the opportunity to vote early or via absentee ballot does not moot any potential consequences of polling place closures. This is why Tables 10 and 11 in my original report focus on turnout in the 2018 General Election, and it is why these tables are ultimately not "misleading," as Dr. Thornton charges. They are not misleading, that is, because they summarize by race the percentage of non-

⁹This is not a hypothetical concern. See, for example, "Rejection of hundreds of absentee ballots in suburban Atlanta county draws legal challenges," *The Washington Post*, October 16, 2018, available at https://www.washingtonpost.com/politics/rejection-of-hundreds-of-absentee-ballots-in-suburban-atlanta-county-draws-legal-challenges/2018/10/16/dafce19a-d177-11e8-b2d2-f397227b43f0_story.html (last accessed April 7, 2020) and "Concerns growing over rejection of mail-in ballots in Georgia, other states," *NBC News*, October 30, 2018, available at <https://www.nbcnews.com/politics/elections/concerns-growing-over-rejection-mail-ballots-georgia-other-states-n926381> (last accessed April 7, 2020).

moving Georgia registered voters who received a new polling place in the period 2014-2018 and then voted in the 2018 General Election and the percentage of non-moving Georgia registered voters who did not receive a new polling place in the period 2014-2018 and then voted in the 2018. These percentages are exactly what I should be looking at when considering possible downstream effects of polling place closures that took place in Georgia between the years 2014 and 2018.

127 Tables 12 and 13 in my original report look explicitly at election day voting in the 2018 General Election. They show, broadly speaking, that White registered voters who received new polling locations in the period 2014-2018 shifted more than corresponding Black registered voters away from election day voting. This result is of secondary importance insofar as the aforementioned Tables 10 and 11 show that White registered voters who received new polling locations in the period 2014-2018 voted more often than corresponding Black registered voters.

128 Dr. Thornton states that the figures in Tables 12 and 13 show that “African-American registered voters were ‘disenfranchised’ the least during the 2018 election by changes in the polling place” (p. 18, paragraph 43, quotation marks in original). Dr. Thornton’s use of “least” here, however, is incorrect given the results in my original report’s Tables 10 and 11. These two tables show that Black registered voters reacted more precipitously than White registered voters to having a new polling place prior to the 2018

General Election turnout. Thus, based on Dr. Thornton's use of "disenfranchised," it follows that Black registered voters in Georgia faced greater disenfranchisement than White registered voters on account of polling place changes in the state during the period 2014-2018.

129 I conclude this section of my Supplemental Expert Report by drawing a parallel between Dr. Thornton's arguments about polling place closures not mattering for individuals who vote early or via absentee voting and the notion of *Separate but Equal*. If a particular group of individuals in Georgia is disproportionately shunted away from election day voting by polling place closures (or, for that matter, by changes in other aspects of Georgia election administration), I would argue that this group is disproportionately burdened, even if members of this group are able to vote successfully after being so shunted. Given the risks associated with non-election day voting, to suggest otherwise would be to posit that the group's separate treatment is nonetheless equal to the way that other groups are treated. Given the risks associated with non-election day voting, differential access to election day voting leads to differential, and non-equal, burdens.

4.7 Critique: Black registered voters who move should never be counted as having had their polling places closed

130 My original report concludes that 459 polling places that existed during the 2014 General Election in Georgia closed prior to the 2018 General Election. There are 1,016,184 registered voters in the 2014 Georgia voterfile who were assigned to the 459 polling places, and Table 3 in my original report describes the racial breakdown of these individuals.¹⁰

131 I show that Black registered voters were more likely by 0.12 percentage points than White registered voters to have a polling place that was closed, but Dr. Thornton critiques this finding, writing that, “[T]his comparison [of Black and White registered voters in Georgia] included registered voters who moved and consequently, their polling place would have potentially changed regardless of a closure in their 2014 polling place” (p. 12, paragraph 29).

132 The argument that Dr. Thornton makes is that my count of individuals who lost polling places should subtract individuals who moved between 2014 and 2018. These individuals, per Dr. Thornton, might have received new polling places regardless. And, since Black individuals move on average

¹⁰My original report’s Table 3 does not include individuals whose race cannot be determined.

more often than Whites (noted in my original report and cited as well in Dr. Thornton's report) my count of Black registered voters who lost their polling places in 2014 is an overstatement.

133 I do not find this critique compelling. By Dr. Thornton's logic, an accounting of the number of Black registered voters who lose their polling places should effectively punish these individuals for the fact that they are frequent movers. In contrast, I argue that, to identify the number of individuals affected by the aforementioned 459 polling location closures in Georgia, I look to see who was assigned to these locations as of 2014. Whether anyone so assigned moved (or passed away, for example) afterward is not relevant.

4.8 Critique: the effects of polling place changes on non-movers vary by county

134 Dr. Thornton raises a concern about county variability and its impact on my report's results about the rate in Georgia of closed polling places. She writes in her report, "[T]here is substantial variation among the 159 Georgia counties in the rate 20 of closure/movement of precincts" (p. 13, paragraph 30).

135 I do not dispute Dr. Thornton's comment that there is variability across Georgia counties in the extent to which polling places were closed in the period 2014-2018. Indeed, my report noted this explicitly on p. 44,

paragraph 114, where I wrote: “The rate of polling place closure by county varied across Georgia.” As evidence of this, my report includes a barplot (Figure 2 on p. 45) that illustrates the variability described in the report and noted by Dr. Thornton.

136 My report did not hide from variability in polling place closure rates across Georgia, and the existence of this variability does not negate the report’s statewide results. In terms of Dr. Thornton’s critique of my Tables 4-6, which report results based on racially homogeneous or near homogeneous areas in Georgia, Dr. Thornton does not dispute any of the numbers in the tables. What she does say in her report about these tables, however, is that they “do not adjust for the variation that exists by county” (p. 13, paragraph 32).

137 Respectfully, I do not understand what Dr. Thornton means here, and in particular I do not understand her use of the word “adjust.” Tables 4-6 do indeed contain Georgia-wide results, and this is intentional on my part. I am not familiar with an “adjustment” that one would make to a statewide result that would ostensibly correct for county variation or any other form of variation that might exist. Dr. Thornton does not offer a citation to a proposed adjustment, nor does she explain how such an adjustment would work.

138 Overall, I stand behind my statewide calculations, and Dr. Thornton has not shown that any of them are erroneous. She disputes these calculations by noting variability across Georgia in polling place closure rates, a point that I documented in my original report as well.

4.9 Critique: dropping Bibb County changes a key result

139 In the process of discussing variability across Georgia in polling place closure rates, Dr. Thornton offers the following observation: “If Bibb County is removed, the percentage of African- American registered voters in 2014 with a closure as of 2018 is reduced to 15.63% and the percentage of Caucasian registered voters increases to 16.36%, yielding an African-American-Caucasian difference of -0.74 percentage points rather than the +0.12 percentage points that Dr. Herron calculates” (p. 13, paragraph 30).

140 Dr. Thornton’s argument is that Georgia minus Bibb County has different race-based patterns of polling place closures than Georgia with Bibb County. I replicated Dr. Thornton’s calculations, and I do not find them troubling for the following reason.

141 First, while Dr. Thornton refers to Bibb County as “one small county,” this county happened to be the 13th largest county in Georgia, of 159, as measured by number of registered voters in 2014. Bibb County

contained approximately 1.54 percent of Georgia’s registered voters in 2014, well over 0.63 percent, which is approximately 1 / 159. I would thus say that Dr. Thornton’s characterization of Bibb County as “small” is a stretch of this term.

142 Second, the 12th largest county in Georgia—as before, measured by numbers of registered voters in 2014—is Hall County and the 14th largest county, Columbia County. I now follow the approach used by Dr. Thornton in her report, first dropping Hall County from my analysis and then computing the Black-White gap in polling place closure rates and then dropping Columbia County.

143 The results are as follows. If I drop Hall County (12th largest county in the state), I find a greater Black-White gap in polling place closure rates than that identified in my original report, *i.e.*, that Black voters experienced polling place closures at an even greater rate than White voters. In particular, the Black-White gap in the original report is 0.12 percentage points, and this gap becomes 0.5 percentage points in the absence of Hall County.

144 Now I drop Columbia County (14th largest county in Georgia). The aforementioned gap of 0.12 percentage points becomes a gap of 0.04 percentage points.

145 If, as a thought experiment, I drop DeKalb County, which is the second largest county in Georgia measured by 2014 registered voters, the 0.12 percentage point gap increases by almost a factor of six to approximately 0.7 percentage points.

146 To be clear, I am not suggesting that my analysis of Georgia polling place closures in the period 2014-2018 should drop any of the state's counties. Rather, the examples I have listed above, in conjunction with Dr. Thornton's dropping of Bibb County, illustrate the absurdity inherent in arguing that it is reasonable to critique my report's analysis by arbitrarily dropping part of Georgia.

147 Dr. Thornton's dropping of Bibb County is an example of what one might call cherry-picking data for removal. One potential reaction to this—I propose dropping Hall County instead—is just as specious. The point here is that any cherry-picking rule that Dr. Thornton could suggest is no better, and yet also no worse, than a corresponding cherry-picking rule that I could articulate. This militates in favor of an analysis of polling place closures in Georgia that considers the entirety of the state as opposed to all of the state minus an arbitrarily chosen part. My original report constitutes such an analysis.

148 As an aside, Dr. Thornton engages in a similar data-dropping exercise on p. 15, paragraph 35, of her report. In this latter exercise, Dr. Thornton

recomputes some of my race-based statistics on polling place closures when dropping 31 of 159 counties (approximately 19.5 percent of them) in Georgia, namely those counties that did not have any polling place closures in the period 2014-2018. She argues that, when 31 of 159 counties are disregarded, the conclusions that I describe in my report change.

149 I cannot understand why Dr. Thornton seems to believe that dropping 31 of 159 counties is useful. The purview of my original report is the entire state of Georgia. As Dr. Thornton herself points out and as is evident in my report, some counties in Georgia had no polling place changes 2014-2018 and some did. All of these counties are nonetheless part of Georgia and belong in a statewide analysis.

150 There are, of course, many ways to choose 31 counties from a set of 159 (roughly 9×10^{32} such ways). I would argue that, rather than engage in an argument over which Georgia counties truly belong in a statewide analysis, the appropriate position is to include all counties, which is what I did in my original report.

5 Revisiting the conclusions in my original report

151 My original report in this litigation offers a variety of analyses that collectively show that the polling place closures in Georgia in 2014-2018, approximately the post-*Shelby County* period, have not been racially neutral. In particular, Black registered voters in Georgia have been disproportionately affected by polling place closures in the state compared to White registered voters.

152 My original report also considers the extent to which there is evidence of downstream consequences of polling place closures. It finds that voter turnout in the 2018 General Election in Georgia was higher for registered voters who did not receive new polling places than for registered voters who did.

153 Dr. Brunell and Dr. Thornton, in two separate reports, have critiqued and in some cases outright challenged the results in my original report.

154 Regarding my finding about the lack of racial neutrality in Georgia polling place closures in the time period 2014-2018, neither Dr. Brunell nor Dr. Thornton has offered a critique which undermines this finding. Regarding potential downstream effects on voter turnout of polling place closures,

Dr. Thornton offers what I described in this report as a potentially important critique. I responded to this critique with a new set of calculations, and my findings about downstream effects are now even stronger. In other words, taking seriously Dr. Thornton's concerns about my downstream effects analysis has led me to update the analysis and conclude that the evidence for downstream consequences of polling place changes in Georgia is more compelling than it was based solely on my original report.

References

Haspel, Moshe and H. Gibbs Knotts. 2005. “Location, Location, Location: Precinct Placement and the Costs of Voting.” *The Journal of Politics* 67(2):560–573.

I declare under penalty of perjury that the foregoing is true and correct.
Executed this 8th day of April 2020, at Hanover, NH.

A handwritten signature in black ink, appearing to read "Michael C. Herron", written in a cursive style.

Michael C. Herron, Ph.D.

CERTIFICATE OF SERVICE

I hereby certify that on this, the 9th day of April 2020, I electronically filed the foregoing **SUPPLEMENTAL EXPERT REPORT OF MICHAEL C. HERRON** with the Clerk of Court using the CM/ECF system, which will automatically send notification of such filing to Counsel of Record:

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